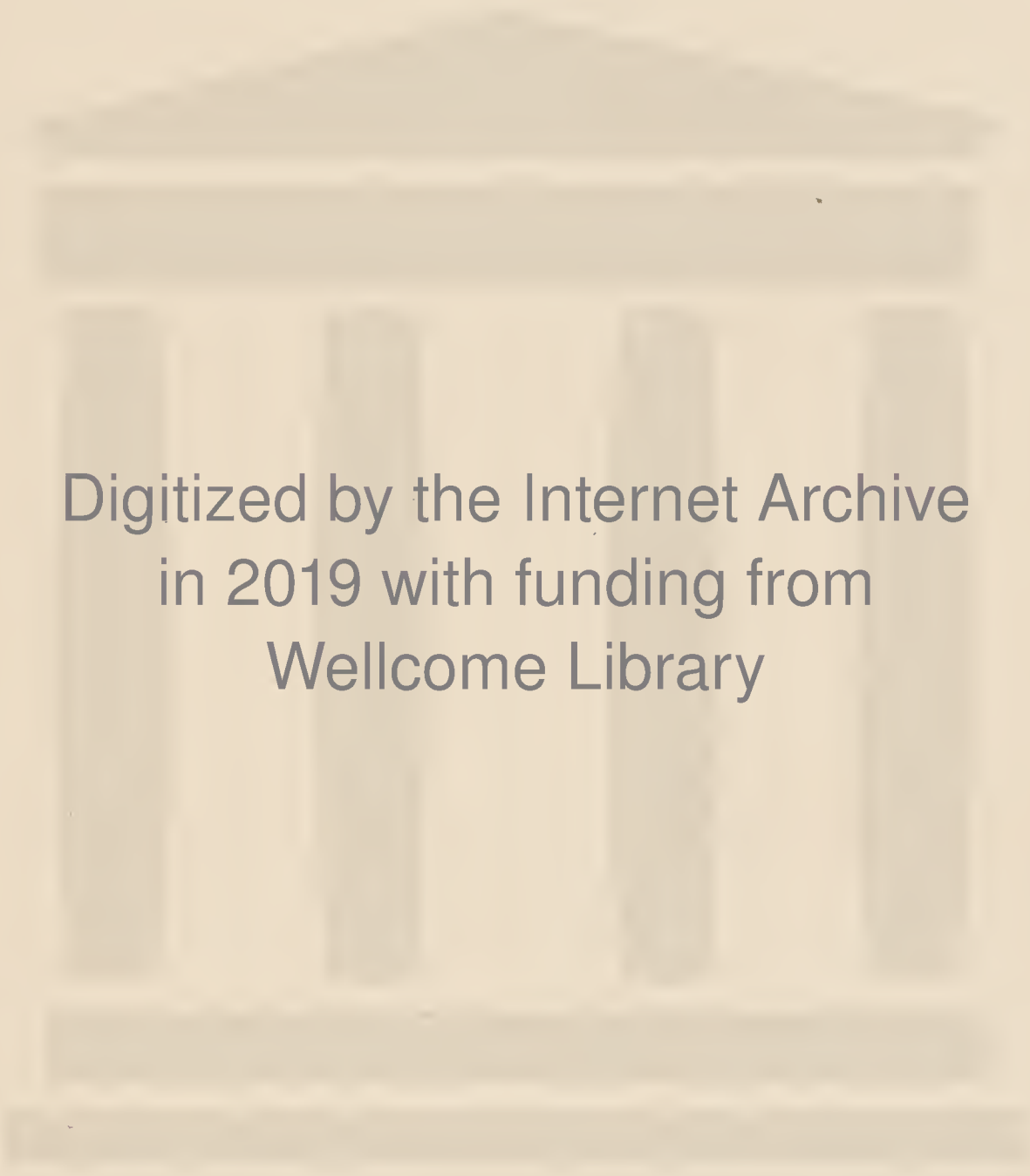


Bay 217

EPR Ser

MED/ 3

Copy 1



Digitized by the Internet Archive
in 2019 with funding from
Wellcome Library

<https://archive.org/details/s3id13406990>

This image shows a blank, aged, cream-colored page, likely an endpaper or flyleaf of a book. The paper has a slightly textured appearance with numerous small dark spots, possibly foxing or dirt, scattered across its surface. There are also faint, illegible smudges and marks, particularly along the left edge where the binding is visible. The overall color is a warm, off-white or light beige.

Stamp & unrecorded
9/12

Contents

No 82	(Vol. XIV)	Jan 1807
" 89	(Vol. XV)	Aug 1807
" 91	"	Oct 1807
" 92	"	Nov 1807
" 93	"	Dec 1807
" 94	(Vol. XVI)	Jan 1808

THE
MEDICAL AND CHIRURGICAL
Review.

JANUARY, 1807.

ART. 1. *Medical Theses; selected from among the Inaugural Dissertations, published and defended by the Graduates in Medicine of the University of Pennsylvania, and of other Medical Schools in the United States: with an Introduction, Appendix, and Notes. By CHARLES CALDWELL, M.D., Editor of the Work.*

[Continued from page 336 of our last volume.]

THE third article in this Collection, is an *Essay on the Use of the Nitric and Oxygenated Muriatic Acids in some Diseases: by Dr. P. G. Prioleau, of Charleston. 1798.*—In this Essay, the author first gives the history of the discovery of the use of the nitric acid in diseases, a discovery which is ascribed to Mr. Scott, surgeon in the service of the East India Company. He then relates several cases in which it was exhibited, either by himself or others, and deduces such conclusions from them as they appear to him to warrant. The oxygenated muriatic acid is afterwards treated of in the same order, and the author endeavours to prove that both these acids act

on the same principle with mercury in the cure of the venereal disease.

The experiments of the author are all decidedly in favour of these acids, both as a remedy for syphilis, and as a general tonic in cases of weakness. He relates a case also of dropy (*hydrothorax*), in which the oxygenated muriatic acid seemed to effect a cure. Its general operation was observed to be diuretic. The author says he has in two instances given the *nitrate of alumine*, but with the contrary effect, namely, that of diminishing the urinary secretion; and he suggests, in consequence, that it might probably be serviceable in the cure of diabetes. The nitrate of alumine was prepared by precipitating the clay from a solution of common alum by means of the vegetable alkali, washing the precipitate several times to free it from the salt formed by the vegetable alkali and vitriolic acid, and then adding the nitric acid, and evaporating with a very gentle heat. One patient took a drachm of this substance daily for five days, and it produced a salivation and sore mouth, that could only be distinguished from the same effects produced by mercury, by their being no foetor in the breath.

Art. 4. 'An Experimental Dissertation on the *Rhus Vernix*, *Rhus Radicans*, and *Rhus Glabrum*'; commonly known in Pennsylvania by the Names of *Poison-ash*, *Poison-vine*, and *Common Sumach*: by Dr. Thomas Horsfield, of Bethlehem, Pennsylvania.'—The plants, which are the subject of the Essay before us, belong to a numerous and extensive family of vegetables. Different species of the genus *Rhus* are found in every quarter of the globe, and inhabit almost every climate. The present are probably selected by the author on ac-

count of their active medicinal powers. Two of them, the *rhus vernix* (called also especially *toxicodendron*), and the *rhus radicans*, have been lately submitted to the notice of our readers*. The third, the *Rhus glabrum*, is considered chiefly in an œconomical point of view, as furnishing much astringent matter, capable of application in the arts of ink-making and dyeing.

The *rhus vernix* (*toxicodendron*) exerts its action chiefly on the skin, occasioning a copious and peculiar eruption, joined frequently with fever, and sometimes even with delirium. But the most unaccountable circumstance in its operation is, the tendency to a return of these symptoms the following year, and, in some cases, for several years in succession; of which different instances are here adduced. Dr. Barton of New York, himself, experienced this. He was poisoned, in the year 1785, near the river Ohio. About a year after this he went to Europe. In 1786, nearly at the same time of the year when he was first affected, most of the symptoms of the eruption returned. Here there could not be the most distant suspicion of the poison being communicated to him by means of the atmosphere, or in any other manner. The eruption returned annually till the year 1790; and at every successive attack it was less violent in degree.

The same gentleman excited in himself the eruption peculiar to this poison by inoculation. A very small quantity of the juice of the *rhus vernix* (*toxicodendron*) was introduced by a slight puncture, between the cuticle and skin of his left hand. In thirty-six hours an itching and tumour were perceived in the spot, and soon afterwards symptoms

* See Med. and Chir. Rev., vol. xii, p. 338, and vol. xiii, p. cxxii, *Miscel.*

of the eruption and slight vesications appeared on different parts of the body : it produced, likewise, a slight swelling of the axillary gland on that side, the usual affection of the scrotum, and an universal itching. The author was induced to try whether the disease could not be further propagated by inoculation; and for this purpose he inserted, in several instances, the serous fluid contained in the vesicles into persons who were very susceptible of the poison : but in no instance did he succeed in exciting the infection.

Art. 5. ' A Dissertation on the Properties and Effects of the *Datura Stramonium*, or common *Thorn Apple*; and on its Use in Medicine: by Dr. Samuel Cooper, of Philadelphia. 1797.'—— A considerable number of experiments are here detailed, relative to the power and effects of this active vegetable, which evince much judgment and industry on the part of the experimenter, and will probably lead to useful practical results. We can here furnish only a brief outline.

It appears, from these trials, that the leaves of the stramonium contain no essential oil, and the distilled water from them produces little or no effect when taken into the stomach. Four drachms of the powdered leaves afforded, by the usual means, twelve grains of resin and a scruple of gummy matter. Three grains of the resin produced much exhilaration of mind, fever and head-ach, and several alvine discharges. The same quantity of the gummy matter occasioned, in addition to the above symptoms, a copious flow of urine.

The leaves appear to possess the active properties of the plant in the greatest perfection. A drop of an infusion of the powdered leaves (two scruples to an ounce and a half), applied to the eye, pro-

duced a dilatation of the pupil. In the author's case, the dilatation was so great as to make the pupil three times the size of that of the other eye, and the effect continued for two days. It was greatest about twelve hours after the experiment. It does not appear that the power of vision was diminished, or the eye rendered torpid, by the application; for, in a weak light, objects were seen more distinctly than with the other eye.

The exhalation of stramonium excites head-ach and fever in the system. It was the opinion of some, that the plentiful growth of the plant in certain parts of the United States gave rise to fever of the remitting kind; and a law has been passed, in consequence, for destroying it. The powdered leaves, in doses of four or five grains, produced fulness and tension of the pulse, intoxication, difficulty of speech, and great thirst; dilated the pupils, rendered the blood fizy, and the stomach sick; opened the bowels, increased the flow of urine, and gave rise to febrile symptoms of some days' continuance. Similar effects, in a less degree, were observed from doses of a single grain. The seeds and roots of the plant possess similar powers.—With regard to the medicinal powers of the stramonium no very decisive evidence is offered. It has been used in epilepsy, mania, tetanus, and rheumatism, but with doubtful efficacy.

Art. 6. 'On *Digitalis Purpurea*, or Fox-glove, and its Use in some Diseases: by Dr. John Moore, of Pennsylvania. 1800.'—This dissertation contains nothing with regard to the effects of digitalis which is not already familiar to our readers. Some cases of phthisis are given, in which it seemed to produce striking relief; and in one or two instances it effected a cure.

Art. 7. 'On the Unity of Disease as opposed to Nosology; by Dr. Alexander May, of Pennsylvania. 1800.'——The late Dr. John Brown was thought to have effected a great revolution in medical science, and a subversion of all preceding doctrines, when he announced that there were but two forms of Disease, the *Sthenic* and the *Asthenic*, requiring different and opposite modes of cure. Our Transatlantic brethren have gone further, and have reduced disease to an *Unit*: the proximate cause is an Unit; viz., *morbid excitement*; and the mode of cure is likewise an Unit, *depletion*: this is the remedy for every disease, modified according to the circumstances of each individual case.

“Consumption, dropsy, gout, rheumatism, and cancers,” the author informs us, “were long considered as incurable; but since these have been found to be only different effects of one primary disease, they have all yielded to the same mode of treatment. The unity of disease abolishes the whole class of incurables, and gives the greatest encouragement to believe, that what is practicable in one form of disease may be accomplished in every other.”——This is, surely, the language of youth and inexperience. Yet we are informed that such doctrines are seriously taught. The author's objections to *methodical Nosology* are, however, well founded: it is only to be feared, that, in shunning one extreme, he has fallen into the other. Simplicity, as well as method and arrangement, may be carried too far.

Art. 8. 'An Attempt to prove that certain Substances are conveyed unchanged into the Circulation; or, if changed, that they are re-composed and regain their active Properties: by Dr.

E. D. Smith, of Charleston. 1800.'—The ancients were strongly impressed with the idea, and it was a necessary result of the humoral pathology then prevailing, that substances of a medicinal nature were conveyed, with little or no change of their properties, into the circulation. This idea was with them not speculative merely: they made it the foundation of much of their practice. Hence they prescribed in certain diseases the milk of animals which had fed upon peculiar vegetables, proper for those diseases. It is a matter of no small importance to ascertain what particular substances are decomposed by the powers of the stomach, and what retain their original nature and properties, when carried into the system. Knowledge of this kind is applicable to important practical purposes, and particularly in regard to the concretions occasionally formed in the body, which may thus find a solvent. The object of the author of the present ingenious essay, is, to collect the observations and experiments that have been heretofore made upon the subject, and to give a brief sketch of the arguments that may be offered in favour of the opinion,---that various substances are found in their active state after having entered the circulation.

The inquiry is divided into two parts: in the first, the author exhibits the proofs of the general fact, as they appear in the state of the different fluids; and, secondly, as they appear in the solids of the body.

Dr. Wright, when he made dogs swallow, with their food, a quantity of sal martis, could detect no chalybeate impregnation of the chyle by chemical tests: whence he concluded that the lacteals would not absorb this substance. Dr. Musgrave, however, and Dr. Fordyce, found that indigo,

thrown into the intestines of sheep, was taken up by the lacteals, and tinged the chyle of a blue colour. Indigo, we know, is not soluble in watery fluids: it must therefore have been taken up in a solid form, minutely divided*.

It has been denied by some, that foreign matters enter the blood unchanged, because it has been observed that such a mild fluid as milk, injected into the veins, occasioned the death of the animal. On the other hand, it has been proved that the injection of medicines in this way is not necessarily fatal; for wine, opium, emetics, and purgatives, have been said to be so introduced with impunity. The foetus has, in different instances, been contaminated, *in utero*, by both the variolous and venereal poison. The honey extracted by bees from the *kalmia latifolia* (bastard laurel), and some other poisonous plants, has the remarkable property of proving errhine, after it has been taken into the stomach some time. It produces sneezing, occasionally, for two or three days afterwards. This plant applied to the nose in powder is strongly errhine†. These, the author thinks, are sufficient proofs that substances pass unchanged into the circulation; and in this way he accounts for the effects of tobacco, arsenic, emetic tartar, &c., when applied externally: this, however, appears to be more doubtful; for the effect might be produced by an action first excited in the skin, and afterwards communicated by sympathy to the brain or other parts.

The milk is another fluid which seems often to be impregnated with foreign substances. Thus it is faintly tinged of a red colour, from eating the Indian fig, and also from madder. It assumes a

* See Fordyce on Digestion. † Barton's Lect. on Mat. Med.

blue colour from the use of indigo*. Saffron also imparts its colour to the milk of women using it†. The milk of cows is often impregnated with the peculiar flavour of the plants on which they feed: and it has been said that infants have been salivated by sucking women under the use of mercury. It is a very common opinion, that purgatives taken by nurses affect children at the breast.

Various substances find their way to the urine, and seemingly unchanged. Thus this liquid is coloured by logwood, the Indian fig, red beets, madder, indigo, and rhubarb. Other substances communicate to it peculiar odours and flavours. The utility of different medicines in cases of urinary concretions may be thus explained; for there is reason to think that certain solvents retain their properties when taken into the system, and secreted afterwards by the kidneys.

The matter of perspiration is likewise well known to be impregnated with the odour of various substances taken into the system; as, opium, camphor, garlic, &c.—These different effects are only to be accounted for, the author thinks, by admitting that substances are taken into the circulation unchanged, or, if decomposed, that they are afterwards re-composed, analogous with certain operations in chemistry.

The proofs of substances being taken into the system unchanged are still more strong as derived from the solids, as will appear from the following extract.

“ The active properties of certain substances, which are eaten by animals, are conveyed into the circulation in such an unchanged state, that the

* Haller Elem. Physiol. *de laëte*.

† Ferris on Milk.

flesh of these animals will produce the same effect as is produced by those substances. It is a fact, well known, that the flesh of wild pigeons which have eaten the berries of the *phytolacca*, or poke root, will purge, if a considerable quantity of it is taken into the stomach. The flesh of pheasants which have fed upon *kalmia latifolia*, or wild laurel, one of the most fatal poisons, has been known, in several well authenticated instances, to exert deleterious effects in a few hours after it has been taken into the stomach*.

“ Dr. Barton informs me that he has been considerably purged by eating the flesh of deer which had fed upon the leaves of the *kalmia latifolia*. Dogs who had eaten the flesh were affected with convulsions and paralysis of the hinder legs.

“ Kæmpfer, in his history of Japan, mentions a fish† which, being fed with a certain poisonous plant, is infected with its peculiar deleterious properties, and destroys the persons who eat of it.

“ The red sea-bream, when found in the South sea, salivates. This fish, taken in the Pacific and Atlantic oceans, does not produce this effect. The peculiar property of salivating is occasioned by its eating the medusa, or sea-blubber, which is known to possess this property‡.

“ The balsam of the *populus balsamifera*, called balsam or tacamahaca tree, is so very penetrating, that it communicates its peculiar smell and taste to the flesh of certain birds which feed upon the buds§. The onion has such a durable strong taste and smell, that it is perceived in the flesh of peacocks who are fond of eating it||.

“ * Medical Repository, vol. i, p. 161.

“ † *Tetraodon ocellatus*. ‡ Cook's Voyages.

“ § Barton's Essay towards a Materia Medica of the United States.

“ || Haller. *Histor. Stirp. Indigen. Helvet.*, vol. ii.

“ It is generally known that the flesh of some animals, killed at a particular season of the year, is strongly tainted with garlic. This is particularly the case with sucking calves, who receive it through the medium of the milk. ‘ The London mutton is known to taste strong of turnips, with which the sheep prepared for market are chiefly fed.’

“ The following fact is transcribed from an ancient book, in its original style and language.

“ ‘ Here a multitude of the inhabitantes, as
 “ ‘ well women as men, resorted to hym (Colum-
 “ ‘ bus) with cheerefull countenaunce and with-
 “ ‘ out feare; bringynge with them popinjays,
 “ ‘ breade, water and cunnys. But especially
 “ ‘ flope-doves muche bygger then owres: which,
 “ ‘ he affirmeth, in favoure and taste to be muche
 “ ‘ more pleasaunt then oure partryches. Where-
 “ ‘ fore, as in eatinge of them he perceaved a cer-
 “ ‘ tyne favoure of spyce to proceade from them,
 “ ‘ he commaunded the crophe to bee opened of
 “ ‘ such as were newly kylled, and fownde the
 “ ‘ same full of sweete spyces, whiche he argued
 “ ‘ to bee the cause of theyr strange taste. For it
 “ ‘ standeth with good reason, that the fleshe of
 “ ‘ beastes shulde drawe the nature and qualitie of
 “ ‘ theyr accustomed nuryshmente*.’

“ Wormwood affects not only the milk, but also the flesh, of animals with its intense bitterness†.

“ ‘ Our table was always plentifully and even luxuriously furnished with truffles, red-legged partridges, and a great variety of small birds; the latter were not indeed very palatable to us at first,

“ * Translation of the Decades of Peter Martyr, decad. i, p. 16, 17. London edition, 1555.

“ † Barton's Lectures on Materia Medica.

on account of the high flavour of the juniper berries, on which they fed*.

“ Birds which live wholly on fish have their flesh to taste of fish. Mr. Hunter observes, ‘ this fact was so well known, that it was hardly necessary to put it to the test of an experiment.’ Yet he took two ducks, and fed one with barley, the other with sprats, for about a month, and killed both at the same time. When they were dressed, the one fed wholly with sprats was hardly eatable, it tasted so strongly of fish†.”

Art. 9. ‘ Experiments and Observations on the Bile: by Dr. Jarvis Roebuck, of the Island of St. Croix. 1801.’—The principal view of the author here, was, to ascertain whether any difference exists in the nature of the bile in different animals. The conclusion from his experiments is, that the bile of all animals is alike in those parts which are most material or requisite for its formation. The difference is only in the proportions, giving a difference in point of colour, degree of bitterness, &c.

Art. 10. ‘ An Experimental Inquiry into the Principles of Nutrition and the Digestive Process: by Dr. J. R. Young, of Maryland. 1803.’—In addition to the before known facts and arguments on the subject of nutrition and digestion, a considerable number of interesting experiments are here detailed, which tend to throw additional light on these obscure processes in the animal œconomy. It was found that the stomachs of frogs were not only capable of dissolving the fleshy parts of small animals, but the bones likewise, and even the teeth. The head and all the bones of a mouse were cleared

“ * Smith's Tour, vol. i, p. 146.

“ † Animal Economy, p. 177.

of their flesh, and forced into the empty stomach of a frog. In two days the bones were all discharged in the form of a mortar, in which, by rubbing it between the fingers, small pieces of bone were distinguishable. The gastric juice of snakes, which swallow their food entire, was found equally solvent with that of frogs. It was observed further, that the human stomach was capable of dissolving bone; for the condyles of the thigh bone of a chicken, weighing eleven grains, were swallowed, and on the fourth day were discharged, reduced to a shell, weighing only three grains.

The author thinks that the greater solvent power of the stomach of frogs, and carnivorous animals in general, in comparison with that of man, arises from the gastric juice being in them undiluted; these animals rarely drinking with their food. Hence he deduces a practical caution,---that where the digestive powers are known to be weak, we ought to avoid diluting the gastric juice by drinking.

The following hint seems to merit attention.—
“ While speaking of the solvent property of the gastric fluid, it may not be improper to observe, it has lately been ingeniously proposed as a solvent for the stone in the bladder. In this disorder we have hitherto only had recourse to the knife; but such a formidable and dangerous operation makes other means desirable. Dr. J. S. Dorsey has proved the gastric fluid may be introduced into the bladder with safety; no endeavours, therefore, ought to be lost in ascertaining what fluid may act on calculi with most effect. From the facility with which bones and teeth were dissolved by frogs, it appeared highly probable their fluid would also operate on calculi. On this subject the following experiment was made.

“ A calculus was obtained from Dr. Jacobs, of a very firm texture, weighing exactly fifty grains. It was introduced into the stomach of one of the large frogs. In two days it was taken out for examination: at first sight it was evident solution had taken place, for the gastric juice which adhered to it was coloured with some of the dissolved stone: it was found to weigh forty-five grains. It was forced into the stomach a second time, where it remained for two days: it now weighed thirty-eight grains. From this, it appears it is well worthy of more attention. When introduced into the bladder, with the heat of the human body, we have little doubt it would act upon calculi with much effect. Their fluid is easily procured, and without the necessity, as in other animals, of sacrificing a life every time we wish to obtain it: by means of a tea-spoon it is readily brought up from their stomachs.”

Some experiments are next related, which seem to shew that vegetable substances are digestible in the stomachs of carnivorous animals, provided the substances are deprived of life. Seeds of different kinds were not dissolved when swallowed entire; but were readily acted upon when broken down. It is rendered probable, also, that the gastric juice is always of an acid nature, and that this acid is the phosphoric, and not the acetous, as has been often supposed. The fact of the identity of chyle in different animals, and from different species of food, is endeavoured to be explained, by supposing the lacteals to be not simply absorbing vessels, but to perform a sort of secretory process, changing the nature of the substance upon which they act.

Art. 11. 'An Experimental Inquiry into the Similarity in Virtue between the *Cornus Florida* and *Sericea* and the *Cinchona Officinalis* of Linnaeus: by Dr. J. M. Walker, of Virginia. 1803.'—The barks of the *Cornus Florida* and *Sericea* (Cornel, or Dog-wood, *Ang.*) possess so much of the astringent principle as to be capable of forming excellent ink with the sulphate of iron, and also of being employed in tanning; the gallic acid and tanning principle being combined in them as in many other astringent vegetables. Compared with the red Peruvian bark, the taste of the *Corni* was a more simple and agreeable bitter, but with considerable austereness conjoined. Upon analysis, the *Corni* and the *Cinchona* were found to contain similar principles; as, gum, mucilage, and extract; which last contains the tannin and gallic acid, though in different proportions. Upon the whole, the barks of the *Corni* (whether of the stem or roots seems indifferent) appear to resemble considerably that of the *Cinchona* in their sensible and chemical properties; and some experiments are related which seem to shew a similarity in their medicinal powers also.

Art. 12. 'An Essay on the Means of lessening the Pains of Parturition: by Dr. P. Miller, of Philadelphia. 1804.'—The means of lessening the pains of childbirth here advised, are, the use of laxatives and a low diet, together with occasional bloodletting, during gestation; but especially bloodletting at the time of labour, and that to a considerable extent. The use of bloodletting for this purpose was first recommended by Dr. Rush, and is said to have been since adopted by several practitioners with the happiest effects. This subject formerly engaged our notice, and to the ac-

count then given we beg leave to refer*. The following cases, however, are so strikingly in proof of the efficacy of the plan proposed, that we shall not hesitate to copy them.

“ *Case 3.* In November, 1801, I was desired by Dr. Dewees to visit a woman who had been in labour nearly two days: on arriving at my patient's I received the following account from the midwife in attendance. The woman, she said, was large and fat, in labour with her first child, and twenty-eight years of age; that she had been in labour thirty-six hours, at the commencement of which every thing appeared to do well; that the labour, though slow, gradually progressed until the head of the child had passed the os tincæ, after which, notwithstanding the pains were strong and frequent, no further progress was made. In this situation she had passed the twenty-four hours previously to my arrival. On making an examination, I found the head firmly wedged in the vagina, the external parts very firm and rigid; and it was with difficulty that I could introduce two fingers into the os externum.

“ It was here evident that the rigidity of the external parts was the sole cause that retarded the birth of the child. I therefore immediately determined to bleed my patient, in order to effect a relaxation of the parts. My intention was to bleed ad deliquium animi; but after drawing off forty-eight ounces of blood, and finding there was no tendency to syncope, I stopped the bleeding to examine the state of the parts. I now found that they were very much relaxed, and that the head was slowly advancing; yet so perfectly easy was the patient, that it could not be ascertained from external appearances that the uterus was contract-

* See *Med. and Chir. Rev.*, vol. x, p. lxi *Miscel.*

ing. I then requested the midwife to take the seat, that I might tie up the arm; and before this was effected my patient was delivered of a large healthy child, and declared that she did not experience the least degree of pain during its expulsion."

"*Case 6.* M. C., aged thirty years, became in labour on the morning of the 27th of January, 1803. During the whole of this day her pains were strong and frequent, yet had so little effect in dilating the os uteri, that, on the morning of the 28th, it was only sufficiently dilated to ascertain that the vertex presented. From this time to twelve o'clock she suffered considerably, from the violent contractions of the uterus; but, notwithstanding this strong action, the os uteri remained inflexibly hard and tense, and was not dilated to more than the size of half-a-crown. She now lost twelve ounces of blood: this, however, produced no effect. At one o'clock the os uteri retained its pristine rigidity. I now drew off twenty ounces more of blood. So immediate was the dilatation, that, in ten minutes, she was safely delivered."

Art. 13. 'An Experimental Inquiry respecting the Vitality of the Blood: by Charles Caldwell, M.D.'—This Paper is of a higher stamp than the *Inaugural Theses* above noticed. It is an Appendix furnished by the Editor himself; and, as both the subject and the manner in which it is treated are highly interesting, we shall reserve its consideration for a future number.

[To be continued.]

ART. 2. *Philosophical Transactions of the Royal Society of London, for the Year 1806. Part Second.* 4to, 235 pages. London, 1806. Nicol.
VOL. XIV. D

Art. 1. 'OBSERVATIONS upon the Marine Barometer, made during the Examination of the Coasts of New Holland and New South Wales; in the Years 1801, 1802, and 1803: by Matthew Flinders, Esq., Commander of his Majesty's Ship *Investigator*.'—The object of this paper is, to point out a coincidence, before unnoticed, that took place between the rising and falling of the mercury in the barometer tube and the setting in of winds that blew from the sea and from off the land. This phenomenon is occasioned, the author supposes, by the lower air, when brought in by a wind from the sea, meeting with resistance in passing over the land. The first body of air thus obstructed will obstruct the following, which will therefore rise over the first, and produce on it a degree of compression, tending to increase its density; and hence the mercury in the barometer will rise. The contrary effects must naturally take place with a wind blowing from the land towards the sea.

Art. 2. 'Account of a Discovery of native Minium: by James Smithson, Esq., F.R.S.'—The ore of lead in this case was found in the substance of a compact carbonate of zinc: its colour was like that of factitious minium, or red lead. This native minium, the author thinks, was produced by the decay of a galæna, which he suspects to be itself a secondary production from the metallization of white carbonate of lead by hepatic gas.

Art. 3. 'Description of a rare Species of Worm Shells, discovered at an Island lying off the Northwest Coast of the Island of Sumatra, in the East Indies: by J. Griffiths, Esq.'—

Art. 4. 'Observations on the Shell of the Sea-worm found on the Coast of Sumatra, proving it to belong to a Species of *Teredo*; with an Account of the Anatomy of the *Teredo Navalis*: by Everard Home, Esq., F.R.S.'—The chief peculiarity of

these shells consists in their uncommon length and size, being the largest of the testacea, of a tubular form, yet discovered. The length of the largest was five feet four inches, and the circumference at the base nine inches, tapering upwards to two inches and a half: the colour on the outside was milk white, the inner surface rather of a yellow tinge. It has been named by Mr. Home, not unaptly, *teredo gigantea*.

Art. 5. ‘On the inverted Action of the alburnous Vessels of Trees: by Thomas Andrew Knight, Esq., F.R.S.’—It is well known that the true sap of vegetables ascends through the alburnum, or sap-wood, to the extreme branches, and then returns by the bark, after having circulated through the leaves, which appear to perform to the juices of the plant the office of lungs. The experiments here detailed go to prove that the alburnous vessels are capable of an inverted action, so as to enable them to carry fluids in different directions; for when a portion of the bark was removed all around the circumference of the tree, some degree of growth took place below the decorticated space, as well as in the roots.

Art. 6. ‘A new Demonstration of the Binomial Theorem when the Exponent is a positive or negative Fraction: by the Rev. Abram Robertson, A.M., F.R.S., Savilian Professor of Geometry in the University of Oxford.’—

Art. 7. ‘New Method of computing Logarithms: by Thomas Manning, Esq.’—

Art. 8. ‘Description of the Mineral Basen in the Counties of Monmouth, Glamorgan, Brecon, Carmarthen, and Pembroke: by Mr. Edward Martin.’—

Art. 9. ‘Observations on the Permanency of the Variation of the Compass at Jamaica: by Mr.

James Robertson.'—It has hitherto been considered that the variation of the magnetical needle is not fixed in any particular place, but is constantly varying, in a greater or less degree, in all parts of the world. From the observations here made, it appears that the Island of Jamaica furnishes an exception to this; for on comparing the surveys of the Island made 130 or 140 years ago with those of the present time, as well as at different intermediate periods, it is clear that no alteration of the variation can have taken place during the whole or any part of that time.—It is highly probable that further inquiries will shew that this exception by no means stands single.

Art. 10. 'Observations on the Camel's Stomach respecting the Water it contains, and the Reservoirs in which that Fluid is inclosed; with an Account of some Peculiarities in the Urine: by Everard Home, Esq., F.R.S.'—The Board of Curators of the Musæum belonging to the Royal College of Surgeons (late Mr. John Hunter's), hearing that a camel in a dying state was to be sold, purchased it with a view of illustrating the anatomy of that animal; and Mr. Home, as professor of comparative anatomy, was appointed to examine the peculiarities of the stomach. The paper here published contains the report made on the subject.

The camel, the subject of the following observations, was a female, brought from Arabia; twenty-eight years old, and said to have been twenty years in England, and twelve years in the possession of the person from whom the Board of Curators purchased it. Its height was seven feet from the ground to the tip of the anterior hump.

In December, 1805, it came under the care of the Committee. At that time it was so weak as hardly to be able to stand. It got up with difficulty, and

almost immediately kneeled down again. By being kept warm, and well fed, it recovered so as to be able to walk, but was exceedingly infirm on its feet: and moved with a very slow pace. It drank regularly every second day six gallons of water, and occasionally seven and a half; but refused to drink in the intervening period. It took the water by large mouthfuls, and slowly, till it had done. The quantity of food it daily consumed was one peck of oats, one of chaff, and one-third of a truss of hay. Some of the urine was saved, and sent to Mr. Hatchett for the purpose of having it analyzed: his account of its component parts is contained in a report annexed to this Paper.

In the beginning of February, 1806, it began to shed its coat. Towards the end of March the wind became extremely cold, and the animal suffered so much from it, that it lost its strength, refused its food, and drank only a small quantity of water at a time.

In this state it was thought advisable to put an end to so miserable an existence: and it suggested itself to the Committee that if this was done soon after the animal had drank a quantity of water, the real state of the stomach might be ascertained.

On the 1st of April, by giving the animal hay mixed with a little salt, it was induced to drink, at two different times in the course of two hours, three gallons of water; not having taken any the three preceding days, or shewn the least disposition to do so. Three hours after this, its head was fixed to a beam, so as to prevent the body from falling to the ground after it was dead, and in this situation it was pithed by Mr. Cline, junior, assisted by Mr. Brodie and Mr. Clift. This operation was performed with a narrow double-edged poniard

passed in between the skull and first vertebra of the neck; in this way the medulla oblongata was divided, and the animal instantaneously deprived of sensibility. In the common mode of pithing cattle the medulla spinalis only is cut through, and the head remains alive, which renders it the most cruel mode of killing animals that could be invented.

The animal was kept suspended, that the viscera might remain in their natural state, and in two hours the cavities of the chest and abdomen were laid open, in the presence of all the Members of the Committee, and Mr. Chandler, a Member of the Board of Curators.

From the comparative view here taken of the stomachs of the bullock and camel, it appears that in the bullock there are three stomachs formed for the preparation of the food, and one for its digestion. In the camel there is one stomach fitted to answer the purposes of two of the bullock; a second employed as a reservoir for water, having nothing to do with the preparation of the food; a third so small and simple in its structure, that it is not easy to ascertain its particular office. It cannot be compared to any of the preparatory stomachs of the bullock, as all of them have a cuticular lining, which this has not; we must therefore consider it as a cavity peculiar to ruminants without horns; and a fourth, or true digesting stomach.

“It is stated by authors that hares, rabbits, and even some men, ruminate; their doing so is not material to the present inquiry, since their stomachs are not of that kind which makes rumination a necessary part of the process of digestion; and as far as I can learn from some persons who feed rabbits and fatten them with meal, although they

have watched their rabbits with attention, they never saw them bring up the food into the mouth. It may therefore be only occasional when they eat particular kinds of vegetables. They have indeed a mode of working their lips when sitting quiet, which may have been mistaken for rumination. When it takes place in men it must be considered as a disease.

“ From the facts which have been stated, the following gradation of ruminating stomachs is established.

“ The ruminants with horns, as the bullock, sheep, &c. have two preparatory stomachs for the food previous to rumination, and one for the food to be received in after rumination before it is digested.

“ The ruminants without horns, as the camel, dromedary, and lama, have one preparatory stomach before rumination, and, properly speaking, none in which the cud can be afterwards retained before it goes into the digesting stomach.

“ Those animals who eat the same kind of food with the ruminants, yet do not ruminate, as the horse and ass, have only one stomach; but a portion of it is lined with cuticle, in which situation the food is first deposited, and by remaining there some time is rendered afterwards more easily digestible when received into the other, or digesting portion.

“ In comparing the teeth of those animals that ruminate, with those of the horse and ass, which live on nearly the same kind of food, the following peculiarities are met with.

“ The ruminants with horns have molares in both jaws, and incisores only in the lower jaw.

“ The ruminants without horns have, in addition to these, what may be called fighting teeth, or a

substitute for horns. These are tusks in both jaws, intermediate teeth between the molares and tusks, and in the upper jaw two small teeth anterior to the tusks; none of which can be of any use in eating.

“The camelo-pardalis forms an intermediate link in these respects. It has short horns, and has no tusks.

“The molares in both these genera of ruminants are open in the structure of their crown, which is not horizontal but oblique; the outer edge in the upper jaw and the inner in the lower jaw being the most prominent, so as to adapt them to each other. The lower jaw has less width than the upper, so that the lower molares fall considerably within the upper: when the animal eats, it can only masticate with one side of the mouth at a time, by bringing the lower jaw to that side, so as to make the teeth of both jaws oppose each other: the teeth of that side are applied to the food three or four times, and then those of the opposite side.

“This mode of mastication appears to be peculiar to the ruminants, and is certainly very different, and much more imperfect, than the mastication of the horse, whose molares are very compact in the texture of their crowns, and are opposed directly to each other by horizontal planes.”

The urine of the camel was found to contain, in 100 parts, Phosphate of lime, 3—Muriate of lime and of ammonia, 15—Sulphate of potash, 6—Carbonate of potash and of ammonia, 4—Urea, 4—Water, 65. It is remarkable that the uric acid should be found in the camel's urine, as it is the first instance on record, as far as relates to the urine of graminivorous animals.

It appeared from other experiments, that potash

is the only fixed alkali present in the urine of the camel, cow, guinea-pig, and rabbit. In this respect, the urine of the horse is peculiarly distinguished from that of those animals, as it is found to contain abundance of soda. The urine of both the horse and the ass changes vegetable blues to green, but is destitute of ammonia.

Art. 11. 'Observations on the Variation, and on the Dip of the Magnetic Needle, made at the Apartments of the Royal Society, between the Years 1786 and 1805: by Mr. George Gilpin.'—

Art. 12. 'On the Declinations of some of the principal fixed Stars; with a Description of an astronomical Circle, and some Remarks on the Construction of circular Instruments: by John Pond, Esq.'—

Art. 13. 'Observations and Remarks on the Figure, the Climate, and the Atmosphere of Saturn, and its Ring: by William Herschell, LL.D. F.R.S.'—

ART. 3. *Observations on Morbid Poisons, Chronic and Acute. The first comprehending Syphilis, Yaws, Scurves, Elephantiasis, and the Anomala confounded with them: the second, Acute Contagions, particularly the Variolous and Vaccine. Second Edition, illustrated with coloured Engravings, and further Commentaries on the Doctrines of Mr. Hunter. By JOSEPH ADAMS, M.D., F.L.S., Physician to the Small-pox and Inoculation Hospitals. 4to, 405 pages, price 1l 5s. London, 1806. Callow.*

THIS, though called a *Second Edition*, is entitled to be considered as a new work, from the extent and variety of the superadded matter. In this light we shall at present consider it, and ex-

tend our analysis accordingly ; referring, however, to our former account, for the nature and contents of the first edition*.

As before, a good many pages are devoted to preliminary remarks on the inaccuracy of language and reasoning too prevalent among medical writers, and which has been the source of much confusion and endless controversy. If we were to judge by this latter test in all cases, Mr. Hunter would appear to be the most incorrect of writers ; for no one has been so little understood by his opponents. But while our author allows that Mr. Hunter's mode of expression was often different from that in common use, he ascribes it to his more correct mode of thinking, which obliged him to express himself in a manner different from others ; because he could not use those expressions in a general sense, to which he had applied a more precise meaning. — This is an apology, but will scarcely be admitted as an excuse. We are inclined to think, that the obscurity in Mr. Hunter's language was in many instances inherent, and independent of the causes here assigned. We are far, however, from attributing it, as some have done, to an obscurity of ideas ; but rather to a defect in education in the first instance, and afterwards to neglect and carelessness with regard to language, which really put it out of his power to express himself, at all times, with sufficient clearness.

This part of the work concludes with a satisfactory investigation of the circumstances under which the stomach is digested after death, and by which the following of Mr. Hunter's doctrines appear to be confirmed—1st, that the gastric juice

* See *Med. and Chir. Rev.*, vol. 2, p. 213.

is probably the same in all animals, whether carnivorous, granivorous, or herbivorous;—2dly, that nothing but its life preserves the stomach from digestion;—and, 3dly, that both the stiffening of the muscles, and the coagulation of the blood after *expiration*, are the effects of remaining life.

The question of the digestion of the stomach after death, merits a further consideration; for the circumstances under which it takes place are so precarious and uncertain, and the fact has been so seldom observed, that Mr. Hunter's accuracy, or rather his good faith, has by some been called in question on the subject. The difficulty, we think, is here very satisfactorily obviated.

In the two instances in which Mr. Hunter observed the stomach to be digested after death, the persons both died by a violent death; and both had been previously in sufficient health to eat a hearty meal. He therefore concluded, that in order to this effect taking place, the animal must be in health immediately before death; otherwise, neither the quality nor the quantity of the gastric juice could be expected to be equal to the purpose. When men die of disease, the appetite usually ceases some time before death, and probably the secretion of gastric juice also. It was concluded from all this, by Mr. Hunter, that, by killing animals in a previous state of high health, the digestion of the stomach would in general be observed. But he never succeeded satisfactorily, excepting in fishes. Nor was *Spallanzani*, in his numerous trials, much more successful.

This disappointment our author explains, by supposing Mr. Hunter to have overlooked the distinction between absolute, *universal* death, and that cessation of visible action which precedes it for a longer or shorter space of time, and which the

author calls *expiration*, confining the term *death* to the former state, or absolute *universal* death. In the latter, or state of *expiration*, the muscles are contracted (whence the rigidity of the body), and the blood is coagulated. These are the effects of still remaining life in the individual parts.

But *universal* death is sometimes produced so instantaneously, that this stiffening of the body does not take place; the muscles neither contract, nor does the blood coagulate (whether it remains in the vessels or is removed out of it). This state of sudden universal death appears to be occasioned by extraordinary exertions; as in animals that are chased to death, who often drop down dead; the same effect is produced by mental agitation, by electricity, and by a blow on the stomach.—These facts are applied by the author, in explanation of the digestion of the stomach after death, in the following manner.

“ That, to produce a secretion of healthy gastric juice, the animal must be in health, cannot be doubted; but it must also be recollected, that for the stomach to be digested it must be dead. Now, an animal may be killed when in high health, yet he may expire before death has taken place in the constituent parts: this we find almost universally the case in slaughtered animals, as the blood usually coagulates, and the muscles become rigid. In this case, though the stomach may contain healthy gastric juice, yet the whole will be exhausted in digesting the contents, before the stomach itself is in a situation to be digested. But when men are destroyed in this manner, the agitation of the mind will sometimes produce immediate death at the moment of expiration. Under these circumstances, if, by a previous meal, the glands of the stomach have been stimulated to secrete, we

may expect to find the organ itself digested, because it is in immediate contact with the digesting menstruum, a part of which it must contain within its own substance not yet effused into the cavity.

“ Hence it follows, that, if we wish to see such an effect produced, we must contrive to kill a healthy animal in such a manner, that death shall instantly take place in the stomach. For if the animal is not in health, the gastric juice may not be secreted; and if the stomach is not dead, the gastric juice can have no more effect on it than before the animal expired.

“ This very easily accounts for our meeting with the case so seldom in the human subject. It, however, has been met with, as may be seen by those who take the trouble of examining the descriptions of dissections in Morgagni and others. But no one before Mr. Hunter was aware of the cause. The destruction of the inner coat of the stomach is by no means uncommon, and many otherwise accurate writers have imputed certain symptoms, during life, to an event which took place after death.

“ In other animals, if we wish to produce the full effect, we must select such as are in health, and kill them in such a manner as to produce instantaneous death. This is always a matter of uncertainty. In fish the difficulty is less, because they not only expire in health, like the other animals killed for our purposes, but because every part becomes dead very soon; as is proved by the suddenness with which putrefaction takes place. Add to this, their stomachs, excepting in those that have gizzards, are extremely thin, and they swallow their food whole and alive. The most striking instance I ever met with was in a john dory. On opening this animal, part of the liver, the intest-

tines, stomach, &c., were found loose in the cavity, with part of a fish half digested, and a living worm. The contents were kept by themselves, and the worm killed. On inspecting them a few hours after, the worm was more than half digested.

“ But we are not to expect this effect uniformly to follow the death of fish. Some die slower after expiration than others, as is well known by the advantage of keeping them before they are dressed for the table, whilst others will not admit of any delay. The season of the year and time of day make a great difference in these as well as in land animals.

“ Among the modes of producing instantaneous death, Mr. Hunter mentions a blow on the stomach. I made several attempts to kill dogs in this way; but whether it arose from the protection of their thick elastic skins, or from whatever cause, I never could succeed. In one instance, however, after a second blow, the animal expired. This was about nine in the morning, in the summer, in the island of Madeira. The dog was immediately put in woollen cloth, and laid on a broad stone full against a south wall, both of which had been previously heated by the sun. Seven hours afterwards the body was examined. No stiffening had taken place: the blood did not coagulate. A hole was found in the great end of the stomach, and, on examining the inside, a considerable part of the substance was found consumed. By morning the putrefaction was universal, and intolerable even to those accustomed to such experiments. This was, however, the only instance in which I succeeded; but it was the only instance in which I had been able to kill the animal in such a manner, that neither stiffening of the body nor coagulation of the blood followed: I therefore resolved to leave the experiment till my return to England

should procure me the convenience of an electrical machine powerful enough to kill a dog. But here I was not more fortunate. Mr. Cuthbertson's most powerful battery did not succeed till after three or four shocks: hence the death being more gradual, the stomach and other parts retained their life. On the following morning the animal was stiffened, and, as might be expected, the stomach was found entire.

“ However, the enquiry and conversation to which this experiment gave rise, convinced me, that, in proportion to the suddenness with which an animal suffers such violence as to produce a cessation of all the actions by which life is supported, is the probability that death in every part will take place. Thus in Portugal and other places, where bullocks are killed by a wound in the spinal marrow, the animal is instantly afterwards cut up, and dressed at any hour of the same day; yet, if the butcher has been successful in his aim, the flesh is never tough, and will not keep long. On the contrary, the mutton which is killed after the English custom requires keeping to make it tender, because a contraction of the muscles follows the slow mode of dying which bleeding produces.

“ It is well known that the usual mode of killing rabbits is by a blow on the neck, which, if successfully inflicted, produces immediate death. This is proved, because the animal may be dressed immediately, without the necessity of being kept till the muscles become relaxed: consequently, in these cases, stiffening does not take place. Mr. Astley Cooper and Mr. Carlisle both assured me, that, in the course of their experiments on these animals, they had sometimes found the stomach so much digested, that the contents were loose in the abdomen, and in some instances part of the liver was digested also. Whoever wishes to repeat these

experiments, must recollect how much depends on the suddenness with which the animal is killed, and on his previous state. It is, therefore, not to be wondered, if we do not always succeed; but it will be found to succeed in proportion as the muscles remain relaxed; or, if they stiffen, to the suddenness with which stiffening and subsequent relaxation take place; and also to the want of coagulation in the blood, or the suddenness with which it is coagulated. The experiments, on all these accounts, will, for the most part, succeed best in summer, when actions of every kind follow each other with the greatest rapidity: indeed, I expected less from our experiment with the dog, because it did not suit Mr. Cuthbertson to undertake it before evening.

“ However, from the hint those gentlemen had given me, it appeared that the experiment might be made with very little inconvenience on rabbits. Between nine and ten in the morning, I waited whilst the poulterer killed a rabbit, by dislocating its neck. It was immediately brought to Mr. Brookes' (that gentleman continuing his dissections during the summer), and exposed to the sun in his south room. About three o'clock of the same day, Mr. Brookes procured another rabbit, which he killed by a wound in the spine. In the evening, the rabbit first killed was found without any stiffening: the other had stiffened*. The fol-

“ * Yet immediately after the wound in the spine, the animal ceased to breathe or struggle. This shews that, however successful such a wound may be, it does not always produce absolute universal death. The animal was not in health when killed, and no pains were taken to preserve his warmth after the wound was inflicted. Probably, if the experiment is often repeated, other concurrent causes may be discovered; but the facts before us are sufficient for my purpose, as will appear by subsequent inferences which cannot be disputed.

lowing morning both were opened. The stomach of the rabbit first killed was so much digested, that its whole contents were in the cavity of the abdomen. The blood was fluid, excepting that in the right ventricle was a small piece of clot, which Mr. Brookes compared to what he had seen in menstrual blood which had been confined. It was not larger than a small horse bean, without any appearance of fibrine; so loose in its texture as to preserve no form, and to lessen its bulk as it was moved. In the other rabbit, which had stiffened, the stomach was entire, and the right ventricle contained so firm a coagulum, as to preserve the exact shape of the cavity and its communicating vessels. When taken out, it was moved without staining the board on which it was placed."

This brings us to the main subject of the work, *Morbid Poisons*. In the first and second chapters, which are almost entirely new, the author descants on the terror entertained by the ancients concerning poisons, and which he contrasts with the modern dread of contagions; and he shews that, in both instances, the bounds of reason have been exceeded. But as, by their increased knowledge of the productions of nature, the ancients were relieved from much of their fears regarding poisons; so there is reason to hope, that, in proportion as our attention to the laws of disease becomes more discriminating, the happiness of mankind will be less alloyed by unreasonable apprehensions of contagion.

The distinction between the terms *endemic*, *epidemic*, *infectious*, and *contagious*, are here pointed out, and an explanation given of the terms *susceptibility*, *disposition*, and *action*, as employed by Mr. Hunter. The law, that 'no two local or consti-

tutional actions can take place at the same time," is illustrated by reference to examples, particularly the intercurrent of measles and small-pox, as noticed by several writers; and the same holds true of scarlet fever and hooping cough; no two of which ever appear and go on together in the same person. It has been remarked by Dr. Willan*, that, in some instances, the hooping cough was instantly suspended by small-pox, and after the decline of the latter returned with the same violence as before. The same has frequently happened, the author observes, after vaccination; and on some occasions, he thinks, the hooping cough has not returned at all, at least it had not ten days after the process of vaccination was completed.—“This,” he says, “is now so generally understood, that many mothers have brought their children to the hospital for vaccination, under an expectation of curing them of hooping cough: and he does not recollect that any of them have been disappointed.” Dr. A. does not, however, recommend this to be done till the acute symptoms of the cough are passed; for as, till that time, the full action of the disease is not over, it is reasonable to expect its return when the process of vaccination is completed.

On comparing together the effects of the variolous and vaccine poisons, the author remarks that each will produce secondary eruptions, having the same property of infecting as the primary; though in point of frequency the appearance of eruptions is widely different in the two cases, not taking place in the vaccine once in three hundred instances.—That the vaccine inoculation is sometimes succeeded by eruptions, is well known; but that these have a specific character, and furnish matter capa-

* *Diseases of London.*

ble of exciting the vaccine affection by inoculation, is, we believe, a new discovery. Dr. Woodville seemed at first to entertain such an opinion, but soon, it was understood, abandoned it; referring the occurrence of eruptions in his early cases to the patients being exposed to a variolous atmosphere while under vaccination.

The following occurrences seem quite inexplicable by any thing yet known respecting the vaccine affection.

“ *Register* 1st. August 14, 1805, William Croft was inoculated, with several others, from a subject who had casual small-pox. Croft had diarrhœa three days after he was inoculated; a circumstance in children often favourable for the future disease.

“ On the 3d day the insertion appeared elevated.—6th, a vesicle.—8th, the vesicle spread.—10th, has a vaccine appearance, with fever.—13th, one hundred and fifty pustules appeared, which passed regularly through their stages, somewhat shortened, as often happens in inoculation.

“ Rogers was inoculated, 26th Aug., from Croft, in two places: only one took effect, which was perfectly vaccine in all its stages. The child had been previously ill, so that it was difficult to ascertain whether any or what degree of constitutional disorder was produced by the inoculation.

“ Mary Ann Dobins, having been previously inoculated from Croft without effect, was, September 2d, inoculated from Rogers.—The arm proved vaccine in all its stages.—On the same day were inoculated from Rogers----

“ I. Richard Jude: his arm was vaccine in every stage—On the 13th day, as the arm was drying, appeared one hundred and fifty variolous pustules.

“ II. Eleanor Watts: arm vaccine.—Pustules

appeared on the 11th day.—On the 13th five hundred were counted: all matured, but dried early.

“ III. Elizabeth Gray: her arm regularly vaccine to the 8th day.—On the 10th, appeared stationary; in consequence of which, inoculation was repeated from Edward Christian's arm, who had been inoculated twelve days.—12th day, the arm first inoculated retains its vaccine appearance, though somewhat jagged with elevations round the vesicle: she had fever the day before, and pustules first appeared on the body.—13th, the arm retains its circumscription, but is yellow: the fever considerable all night.—14th, the first inoculation dry; the second contains a yellow crystalline lymph, with areola: has upwards of sixty small circumscribed pustules.—15th, arm drying, pustules suppurating.—19th, pustules drying,—22d, scabbed.

“ IV. Thomas Dyson: his arm was perfectly vaccine in all its stages.—10th day, a few pustules appeared: had been sick on the 9th evening.—12th day, the arm drying.

“ From Dobins seven were inoculated: of these, —Five had no eruption: the arms were vaccine in all the stages, and in the appearance of the scab. One had a perfectly vaccine appearance on the arm, areola, and brown scab, with one hundred variolous pustules, which appeared on the 12th day, and began to dry on the 16th; but the desiccation was not completed till the 29th, when the appearance was horny. The other had a vaccine arm, somewhat irregular, with fever, but no pustules.

“ From the last were inoculated four: of these, two had vaccine arms, perfect in all their stages, and without pustules. One had the vaccine vesicle regular, excepting that the edges sloped in

such a manner that the base was broader than the apex: the top was however flat, and the whole appearance such as occasionally occurs in the genuine vaccine. The other had small pustules, which dried, as well as the place of insertion, by the 15th.

“ Elizabeth Gray, we have observed, has pustules: two were inoculated from her arm, and two from her pustules. The two from the arm had the legitimate vaccine appearance: one from the pustules had fever, with general efflorescence; the other had all the symptoms of vaccination, with the areola; but the contents of the vesicle became yellow before it dried.”

No explanation is offered of these occurrences; yet they are in opposition to the received characters of the vaccine affection. In any other writer, we should have been ready to suspect that some inaccuracy had crept in. Variolous pustules, as above remarked, have been repeatedly observed to accompany the vaccine, under the circumstances mentioned; but the production of the vaccine by the variolous, is, we believe, new in the history of the two affections. Time will probably solve the difficulty.—In a second register, it appears that where a subject was inoculated at the same time, in different parts, with both vaccine and variolous matter, each insertion acquired and preserved its proper characters, and five secondary variolous pustules of an opaque white appearance shewed themselves; yet the matter from the vaccine vesicle in this case produced, by inoculation, the vaccine appearance in the inoculated part, attended by a hundred white circumscribed secondary pustules; while the matter of the secondary pustules produced in a second person the vaccine vesicle, with a few papillary eruptions which never

maturated.—All this must, for the present, be considered as anomalous.

The 3d chapter contains inferences from what has been recorded by other writers that has a tendency to illustrate the doctrine of morbid poisons. In the three following chapters, the author enters into a fuller detail of the laws applicable to morbid poisons in general; and this is succeeded by a minute description of the venereal disease in all its forms, primary as well as secondary. The practical treatment of each, which, in the former edition, was presumed to be understood, and easily deducible from the theory, is, in the present, entered into with much minuteness and judgment.

These different points occupy several chapters, from the 7th to the 14th inclusive. In the course of which, the author enters into the proofs that the venereal ulcer was unknown to Celsus, though this writer accurately describes all those which have been called anomalous. A hint, however, is thrown out in a subsequent part of the work, that *syvens* might *possibly* have been known to Celsus, at least in some of its forms. Some experiments are related, made by Mr. Wachsel in the Small-pox Hospital, which shew that the saliva of patients under the confluent small-pox is capable of giving the disease by inoculation.

This part of the work is terminated by a summary of Mr. Hunter's doctrines regarding the venereal disease, but which we must presume our readers in general to be acquainted with.

Chap. 15 treats of *sibbens* or *syvens*, a disease that has been supposed to be peculiar to Scotland, resembling, in many of its characters, the secondary symptoms of lues venerea. The first account of this disease, the author says, was published by Dr. Gilchrist in the year 1771, in the 3d

volume of the *Physical and Literary Essays* of Edinburgh, but was previously read in 1765, and at that time printed in a single sheet, for the benefit of that class of people to whom it might be supposed principally useful. The published account of this disease, however, we may remark, goes back to a much earlier period. We have in our possession a treatise on the subject, published in the year 1718, and to which we shall presently refer more particularly.

Notice is taken by Dr. A. of the principal writers who have treated of the subject of *sivvens* since the period mentioned; namely, Dr. Adam Freer, who gave some account of *sivvens* in an appendix to his Inaugural Dissertation *De Syphilitide Venerea*, written about the year 1765; and Mr. Hill of Dumfries. Unsatisfied with the information afforded by these, Dr. Adams undertook a journey into Scotland, in the year 1805, expressly for the purpose of making his own observations on so interesting a subject, and one that was so intimately connected with his other inquiries. The result of his examination is the opinion, that the disease (*sivvens*), though resembling in many points the venereal, is yet of a distinct nature and origin. The differences between them are thus stated.

“ The venereal gonorrhœa [*qu.* fore-throat?] differs from the throat inflamed by *sivvens*, in the appearance of the discharge, and in the greater disposition *sivvens* shows to excite the effusion of coagulated lymph.

“ The ulceration differs,—the venereal being attended with callous edge and base, and *sivvens* consisting only of the clean phagedænic ulcer.

“ Secondary local symptoms differ,—the venereal retaining longer its copper appearance, and afterwards becoming more elevated, retaining more

the colour of the skin, and the scab, when formed being more scaly.

“ In *sivvens*, the *appearance* is very early pustular, though I never could detect pus under the cuticle. I should, therefore, conceive the pus still less in quantity than in syphilis. It is probably thinner, that is, more truly lymphatic, as it hardens into an irregular dark brown crusty or stony scab. There is nearly the same difference between this and the venereal scab, as between the cow-pox and small-pox scabs.

“ Lastly, it is now universally admitted, that *sivvens* never attacks the bones but by spreading from the soft parts, and that it yields earlier to mercury than syphilis.”

We shall make no apology for differing in opinion here from the learned author; well knowing that his sole object upon this, as well as other occasions, is the discovery of truth, an object that is best attained by a free discussion. That his account of the disease is correct as far as it fell within his own observation, no one will question, who knows his usual accuracy, both in observing and in describing diseases. Our doubts respect the general application of the characters above given. The authors who have written on *sivvens* by no means agree, in every point, in their descriptions; though there is sufficient correspondence to shew, that they are treating of one and the same disease. From this it may, we think, be inferred, that *sivvens*, like most other diseases, is not perfectly uniform in its characters, but subject to some diversity, both in regard to its symptoms and the effects of remedies.

“ Speaking generally, the writers on the subject mark the striking resemblance of the symptoms of *sivvens* to those of the venereal disease. The old

author above alluded to says, "it is a common received opinion, that the lues venerea is not any ways propagated but by impure *concubitus*, and yet this distemper is the very same with it, *except* it not being introduced by a *coitus*, nor preceded by a gonorrhœa, neither for the most part accompanied with buboes nor chancres."—Dr. Gilchrist, speaking of this disease, says, the *sivvens* was soon discovered to be of the venereal kind; that, if not the same, it has an exact resemblance, both in its symptoms and cure.—Mr. Hill, of Dumfries, likewise considers it as the same with the venereal disease. Dr. Paterfon*, on the contrary, appears to have observed the disease with some variety of symptoms; whence he concludes, that it is not the same disease with syphilis; a conclusion, as we have just seen, that is adopted by our author.

With respect to particular symptoms, the accounts of other authors do not entirely correspond with the disease as observed by the author of *Morbid Poisons*. "It is now universally admitted," Dr. A. observes, "that *sivvens* *never* attacks the bones but by spreading from the soft parts."—Dr. Paterfon also says, that he never knew any other bones affected but those of the nose and jaws. Dr. Gilchrist remarks, that "the *yaws* (the country term for *sivvens*) is certainly a more cutaneous affection than the common lues, for it *almost never* affects the large hard bones."—Whereas, the author of the tract quoted below, says that one of the ways by which it attacks, is by "*nocturnal pains*, which degenerate into *nodes*;"—and for these he advises strong mercurial unctions.

With regard to *sivvens* yielding earlier and more

* See a paper on this subject in Dr. Beddoes's *Western Contributions*, by Dr. Paterfon, of Ayr, in answer to some *Queries* proposed by Dr. Adams.

easily to mercury than syphilis, there is here also a contrariety of opinion. Dr. Paterfon (as well as our author) maintains the affirmative; and adds, that the corrosive sublimate is the preparation that cures it most speedily, and that salivation is never necessary. Dr. Gilchrist speaks as strongly in favour of sublimate; and accounts for the fact, by the sivvens affecting the surface of the body more than the common lues. He remarks also, that it is more easily cured than the common lues. Some allowance, however, is to be made here for the difference of subjects; the sivvens is more frequently found in children and females, who, we know, are more readily impressed by mercury, and in whom lost parts are more quickly restored. And it will be seen, in the quotation to be presently made, that the disease is not always curable with so much facility as is here expressed.

To the above the writer of these remarks is able to add, from his own observation of the disease in the Royal Infirmary of Glasgow, where instances of it are exceedingly common;—from the register of a great number of cases of sivvens kept there;—as well as from the opinion of the practitioners in general in that neighbourhood,—that the disease often requires for its cure as severe a use of mercury as ordinary syphilis: and it is, in fact, commonly treated by mercurial inunction, carried the length of inducing salivation. The peculiarity of character in the ulcers observed by the author, in the cases which fell under his notice, we have not been able to perceive; and, indeed, the general opinion there entertained of it, is, that sivvens is only a modification of the venereal disease.

But it is time to advert to the work repeatedly alluded to above, as containing an account of sivvens so long anterior to that of Dr. Gilchrist in

the *Edinburgh Essays*. The title of it is, *Miscellaneous Observations in the Practice of Physic, Anatomy, and Surgery: with new and curious Remarks in Botany; adorned with Copperplates. Communicated in several Letters to eminent Physicians and learned Members of the Royal Society, viz., Sir Hans Sloane, Dr. Mead, Dr. Halley, &c.: by Patrick Blair, M.D., F.R.S. Printed, in 8vo, for W. Mears, London, 1718.* Amongst a number of valuable practical Tracts, written in a concise but perspicuous style, is the following account of the disease in question, in a letter addressed to Dr. Mead, dated July 6, 1713. The work being probably in few hands, and the passage relating to sivvens of no great length, we shall transcribe this entire.

“ The third distemper is what I suppose you have got no account of, being as yet but little known in this country (where it took its rise), except in a few corners thereof. We generally compute its date to commence at the famous battle of *Killy-chrankie*, soon after which it began to appear. It has not as yet spread far, but wherever it takes it is very infectious. It is a common received opinion, that the *lues venerea* is not any ways propagated but by impure *concubitus*, and yet this distemper is the very same with it, except its not being introduced by a *coïtus*, nor preceeded by a *gonorrhæa*, neither for the most part accompanied with *buboes* nor *chankers*. It spares none, affects the sucklings, violently seizes those under age, and such as can be no ways suspected to have a *lues venerea*. It is generally known four ways: First, by *nocturnal pains*, which degenerate into *nods*. Secondly, by an *exulceration* of the *throat*, landing in a *carious palate* and falling off the nose. Thirdly, *cacoëthes* ulcers over all the body.

Fourthly, *cotylidones* here and there upon the body, or dry elevated *pustuls* unequal in the surface, not unlike the fruit of the *Rubus Idæus*, commonly called with us the *stovans* (from which the disease takes its name), being much of the same red fleshy colour with that fruit when ripe. The *cotylidones* affect most parts of the body except the *pudenda* in both sexes, by which alone it may be distinguished from the *lues venerea*. This distemper is so contagious, that if any servant labouring under it (as it is generally that rank of people that are most affected with it) do take care of children, be in more frequent converse with other servants, or, in a word, if their bed-cloaths be mixed with those of the rest of the family, it seldom goes off without communicating itself to some one or other of them. This I've known by experience, and generally those have been either sucklings or underlings, as I have said, about ten or twelve years of age, and sometimes those of betwixt twenty and thirty, whose behaviour could give no ground to suspect its being venereal.

“ It now remains, that I enquire into the origine, and inform you of the ordinary cure of this distemper. As to the first, after a more serious consideration of the matter, I can find nothing more reasonable than that after the battle of *Killy-chrankie*, when the souldiers, being dispersed all over our Highlands, had a greater occasion of diffusing their impurities in those parts of the country than perhaps ever before, and of infecting the females there. Now Highland nurses being always much valued by those in the Lowlands, because of the wholesomeness of their food, had in all probability communicated it to the children on their breasts, upon whom it appeared with that variety of symptoms I've told you of. Again; those children, it seems,

by the effluvia or transpirations from their body, communicated it to their dry nurses, as we call those who take care of them after weaning; and hence it is probable it might have become contagious. This I only give you as a conjecture. However, by the symptoms given, I'm of opinion it may be termed *lues venerea notha cœu spuria*, as will further appear by the cure. When first this distemper began to break out, it was generally taken for an inveterate pox, to which no *gonorrhœa* had preceded; whereupon they endeavoured to carry it off with doses of *merc. dulc.*, which in some succeeded pretty well, in others not at all: for such as are seized with it are most uneasy to work upon; so that I've been obliged to give prodigious doses of mercury without any sensible effect: and if once mercury be essay'd in this distemper, and not brought up to a sufficient height, the patient's body becomes almost impregnable; inso-much, that I have given two scruples of *turpeth. mineral* for a dose, without any apparent effect; and a solution of *mercur. crud.* in the spt. of nitre externally to the ulcers, which yet have not yielded. The usual cure of this distemper is strong *emeticks*, either with *turpeth. mineral*, or *gut. gamb.*; strong mercurial unctions in case of nodes and nocturnal pains; mercurial lotions and unctions externally to the ulcers, and *mercur. dulc.* or *turpeth. mineral* internally, with several purgative doses, alternately given, when we have a mind not to carry it off with a total flux. But, to be sure, this mercurial diet is not to be given over till the cure be performed, otherways the distemper recurs, and becomes more violent, and remedies ineffectual, as is said: so that you see how near of kin this is to the *lues venerea* in its signs, symptoms, and cure.

“ It is very observable, that altho’ this distemper has been raging among us these twenty-four years past, yet it has not much exceeded the bounds of four or five parishes to this hour; so favourable is good Providence in restraining the progress of a distemper which otherways might prove very noxious to a whole country, and in saving the better rank of people from its infection. I have of late been inform’d, that it now rages near to *Inverness* and *Inverlochy*, which must have been communicated to the inhabitants of those Highland countries by the soldiers, as is above observed.”

We may fairly conclude, from what is adduced above, that the *syvens* is liable to some diversity of character; so that the laws to which it is subject can not justly be deduced from one particular form of it. This applies, in our opinion, to the whole of the *anomalous morbid poisons*, as they are termed, which are here treated of with great perspicuity, and much in detail. We must acknowledge that we still feel the same difficulties as when we formerly noticed Mr. Abernethy’s opinions upon the subject*. It appears to us far less embarrassing, and at the same time consistent with other natural phenomena, to suppose these anomalous cases, and likewise *syvens*, to be varieties merely of the venereal disease, occasioned by causes not always easy to be traced, than to refer them to specifically-different morbid poisons. The points of resemblance are infinitely stronger than those of difference. “ I have not,” says Mr. Abernethy (and on a question of this sort, Mr. Abernethy must be admitted a competent witness), “ been able to discover any characters appropriate to these diseases: the fictitious disease in appearance so exactly

* Vide page 59 et seq. of our last volume.

resembles syphilis, that no observation, however acute, seems to be capable of deciding upon its nature." And again, "It must also be remarked, that true venereal spots and ulcers sometimes assume the appearance of other diseases, and do not possess their ordinary characteristics*."—Now we may ask, how are such cases to be known to be venereal or otherwise? it will be answered, "by observing the whole progress of the disease, and its manner of terminating, with or without the aid of medicine." But is it not probable that the same circumstances, whatever they are, which affect the progress of the disease, and the order of its symptoms, should at the same time modify the effects of remedies? If mercury invariably cures the venereal disease in its regular forms, it seems not unreasonable to expect that an anomaly in regard to the symptoms and course would be attended with a corresponding anomaly in regard to the cure. And we should scarcely be justified in concluding, that a disease is not venereal, either because it refuses on some occasions to yield to mercury; or, because it gets well, in some few instances, without any mercury at all, or by the use of a quantity that in general is found insufficient for the cure of ordinary syphilis.

Diseases, it is well known, are greatly modified by various external causes, both in their phenomena, progress, and cure. Such a cause, among many others, is *climate*, which appears to influence syphilis as well as other diseases. It can not, we think, be fairly disputed, that syphilis has yielded, on different occasions, to other remedies than mercury. Even in our own cold climate, it has, to a certain extent, given way to such, if we may give credit to the fidelity and accuracy of those whose

* *Surgical Observations, &c.* by J. Abernethy, part second, p. 134.

opportunities have been most extensive*. But in warm climates, this would seem to be much more common. Among other instances of this that might be adduced, we shall only mention the following. M. *Frank*, one of the physicians that accompanied the French army in its late expedition to Egypt, reports to M. *Desgenettes*, the physician general, as follows: “*Rosette n’a ni medecins, ni chirurgiens, ni pharmaciens instruits ou experimentés. Il est d’usage de traiter les maladies veneriennes avec la falsaparilla et les bains; ce qui reussit†.*”—This is consonant with what Dr. *Russell* and others have remarked, of the mildness of the venereal disease in those countries.

We have extended our remarks on this head to a considerable length, conceiving the subject to be one of considerable practical importance; and although we have been unable to adopt entirely the author’s conclusions with regard to it, we are persuaded, from the candour with which the inquiry has been conducted on his own part, that our opposition will not be attributed to any desire to cavil, nor other improper motive. If we were disposed to complain particularly, it would be of the excessive deference paid to the opinions of Mr. *Hunter*, which seem to be received as indisputable axioms. Some of these appear to us to be untenable, *unless with exceptions*; and, of course, we must object to the conclusions drawn from them. The reasoning employed by the author (admitting his principles) is very forcible, and according to the strictest rules of induction.

* *Observations on the Effects of various Articles of the Materia Medica in the Cure of Lues Venerea*: by John Pearson, Surgeon to the Lock Hospital, &c.

† *Histoire Medicale de l’Armée de l’Orient, par Desgenettes*, 8vo, p. 117.

If, in reality, there are such exceptions as we contend for, they will readily account for the anomalies described, which are here referred to a distinct and specific origin.—The remainder of the volume must make the subject of a future article.

[To be continued.]

ART. 4. *Practical Essays on the Management of Pregnancy and Labour; and on the Inflammatory and Febrile Diseases of Lying-in Women.* By JOHN CLARKE, M.D., Teacher of Midwifery in London. Second edition, 8vo, 156 pages, price 4s 6d. London, 1806. Johnson.

THE first publication of these essays was in the year 1793, a short time prior to the commencement of our journal. For this reason we shall take a brief view of their contents, though no material alteration or addition to them seems to have been made on the present occasion.

The first essay is on the general management of pregnant women, with a view to the prevention of disease, and on the retroversion of the uterus. On the latter subject, the author observes that a habit of retaining the urine too long, and the consequent distension and elevation of the bladder, is the general cause of retroverted uterus; and that the attention of the practitioner should be directed rather to the evacuation of the urine by the catheter, than to the replacing of the uterus, which is seldom necessary; and any violence in making the attempt is improper and hurtful.

Essay 2. General Management of Women in Labour, with a View to the Prevention of Disease.—

Essay 3. Treatment of Women after Delivery, with a View to the Prevention of Disease, or After

Pains, and the Lochial Discharge.—Essay 4. On the Milk Fever, and on Inflammation and Suppuration of the Breasts.—The remarks on these heads are judicious, but suggest nothing of particular importance, that is not pretty well understood among practitioners.

Essay 5, treats of the other inflammatory diseases attacking women in the puerperal state. The author, at setting out, contends for the exclusive right of male practitioners to the practice of midwifery, and laments that ‘the progress of the art has been obstructed, on the one hand, by the delicacy of women; and opposed, on the other, by prejudices suggested by interest, and artfully propagated by many practitioners in the other branches of physic.’ He complains, also, that to attend women in labour has been held as a disqualification for holding some of the higher offices in some bodies of surgeons; as if it were less important to relieve a woman from the greater “pain and peril of childbirth,” than from the lesser one of *piles* or a *fistula in ano*. Some of the most learned bodies of physicians, too, it seems, have acted upon the same false principles; “as if the pain of child-bearing were less deserving of relief, than a *fit of the gripes*.”—The learned bodies alluded to will here probably object, *in limine*, to the *premises*, and will perhaps be inclined to doubt, whether, in ordinary labour at least, the obstetric gentlemen have much stronger claims to merit on the score of lessening the “pains or perils” of the parturient state, than the female devotees of *Lucina*. As to the *delicacy of our women*, it seems likely that the author will shortly have very little ground to complain upon this score.

The author shews that, under the general term *puerperal fever*, there have been described a variety

of affections, widely different both in their nature and mode of cure. Thus the *milk-fever*, simple inflammation of the uterus and ovaria, inflammation of the peritonæum, and that epidemic disorder which has at different times occurred among lying-in women, and proved extremely fatal, have all been reduced under the denomination of *puerperal fever*, and too often considered as requiring a similar method of treatment. It is the latter disease, the author seems to think, to which the term ought to be confined, and which is here described with great minuteness and accuracy. The author supposes it to be contagious, and that the fever which accompanies the disease is the primary affection, while the affection of the abdomen is merely symptomatic: this we think highly probable. It is certain, however, that the combination adds greatly to the violence and rapidity of the disease, and to its fatal tendency.

Dr. Clarke seems to think that the state of the abdominal viscera in these cases is not inflammation, but merely a disposition in the vessels to throw out serum, or a fluid in some degree resembling it; but this opinion is without probability. As the topical affection is observed to influence the course and symptoms of the fever, so it might be expected that the latter would modify the former, and induce appearances not found in ordinary inflammation. The actual presence of inflammation would seem to be sufficiently characterized by the great pain, heat, and tension of the abdomen, by the effusion of fluid in the cavity, and the coating observed after death on the different viscera.

There is no doubt that the treatment of the disease is rendered exceedingly difficult by this combination of symptoms; and the author observes with too much truth, that the disease is less obedient to the powers of medicine than any which

he knows. Bleeding, either general or local, he says, has always been prejudicial; and he does not entertain much better expectations from blisters to the abdomen. Vomits and relaxants, as antimony, have likewise, according to the author's experience, done no good. His own plan was, to support the strength and diminish irritability; which was best accomplished, he says, by bark combined with opiates, in large doses; as a drachm of the former, with a grain of opium, every six or even four hours.—Notwithstanding what is here said against bloodletting, there are practitioners who have derived the greatest advantages from it, carried to a considerable extent. While some others of good observation and of great experience rely on copious purging, as preferable to all other means.

The volume is terminated by a section on 'Chronic Pain of the Abdomen after Child-bed,' the effect, apparently, of inflammation, for which relaxants and mild evacuants are chiefly recommended.

ART. 5. *Strictures on Dr. Grant's Latin Edition of his Essay on Yellow Fever.* By THOMAS DANCER, M.D., *Author of Strictures on the English Edition.* 12mo, 24 pages: printed in Jamaica, 1806.

THE English edition of Dr. Grant's Essay was briefly noticed in a former number of our Review*. What could have been his motive for giving it a second time to the world, in *Gallipot Latin* (to use our author's phrase), we cannot divine, unless it were to furnish a lash to the whip of his sworn antagonist, who has not been sparing in its application.

* Med. and Chir. Rev., vol. ix, p. 231.

Miscellaneous.

JANUARY 1807.

- § 1. *Supplement to the Madrid Gazette of the 14th of October, 1806. (Translated from the Spanish.)*

ON Sunday, the 7th of September last, Dr. Francis Xavier Balmis, Surgeon Extraordinary to the King, had the honour of kissing his Majesty's hand, on occasion of his return from a voyage round the world, executed with the sole object of carrying to all the possessions of the Crown of Spain situated beyond the seas, and to those of several other nations, the inestimable gift of vaccine inoculation. His Majesty has inquired, with the liveliest interest, into all that materially related to the expedition, and learned with the utmost satisfaction that its result has exceeded the most sanguine expectations that were entertained at the time of the enterprize.

This undertaking had been committed to the diligence of several members of the Faculty, and subordinate persons, carrying with them twenty-two children who had never undergone the small-pox, selected for the preservation of the precious fluid, by transmitting it successively from one to another during the course of the voyage. The expedition set sail from Corunna, under the direction of Balmis, on the 30th of November, 1803. It made the first stoppage at the Canary Islands, the second at Porto-Rico, and the third at the Caraccas. On leaving that province, by the port of La Guayra, it was divided into two branches: one part sailing to South America, under the charge of the Subdirector Don Francis Salvani; the other, with the Director Balmis on board, steering for the Havanna, and thence for Yucatan. There a subdivision took place: the Professor Francis Pastor proceeding from the port of Sisal, to that of Villa Hermosa, in the province of Tobasco, for the purpose of propagating vaccination in the district of Ciudad Real of Chiapa, and on to Goatemala, making a circuit of four hundred leagues, through a long and rough road,

comprising Oaxaca; while the rest of the expedition, which arrived without accident at Veracruz, traversed not only the Vice-royalty of New Spain, but also the interior provinces; whence it was to return to Mexico, which was the point of re-union.

This precious preservative against the ravages of the small-pox has already been extended through the whole of North America, to the coasts of Sonora and Sinaloa, and even to the Gentiles and Neophytes of High Pimeria. In each capital a council has been instituted, composed of the principal authorities and the most zealous members of the Faculty, charged with the preservation of this invaluable specific, as a sacred deposit, for which they are accountable to the King and to posterity.

This being accomplished, it was the next care of the Director to carry this part of the expedition from America to Asia, crowned with the most brilliant success, and, with it, the comfort of humanity. Some difficulties having been surmounted, he embarked in the port of Acapulco for the Philippine Islands; that being the point at which, if attainable, it was originally intended that the undertaking should be terminated.

The bounty of Divine Providence having vouchsafed to second the great and pious designs of the King, Balmis happily performed the voyage in little more than two months: carrying with him, from New Spain, twenty-six children, destined to be vaccinated in succession as before; and as many of them were infants, they were committed to the care of the matron of the Foundling Hospital at La Corunna, who in this, as well as in the former voyages, conducted herself in a manner to merit approbation. The expedition having arrived at the Philippines, and propagated the specific in the islands subject to his Catholic Majesty, Balmis, having concluded his philanthropic commission, concerted with the Captain General the means of extending the beneficence of the King, and the glory of his august name, to the remotest confines of Asia.

In point of fact, the cow-pox has been disseminated through the vast Archipelago of the Visayan Islands, whose chiefs, accustomed to wage perpetual war with us, have laid down their arms, admiring the generosity of an enemy who conferred upon them the blessings of health and life, at the time when they were labouring under the ravages

of an epidemic small-pox. The principal persons of the Portuguese colonies, and of the Chinese empire, manifested themselves no less beholden, when Balmis reached Macao and Canton; in both which places he accomplished the introduction of fresh virus, in all its activity, by the means already related; a result, which the English, on repeated trials, had failed to procure, in the various occasions when they brought out portions of matter in the ships of their East India Company, which lost their efficacy on the passage, and arrived inert.

After having propagated the vaccine at Canton, as far as possibility and the political circumstances of the empire would permit, and having confided the further dissemination of it to the physicians of the English factory at the above-mentioned port, Balmis returned to Macao, and embarked in a Portuguese vessel for Lisbon, where he arrived on the 15th of August. In the way he stopped at St. Helena, in which, as in other places, by dint of exhortation and perseverance, he prevailed upon the English to adopt the astonishing antidote, which they had undervalued for the space of more than eight years, though it was a discovery of their nation, and though it was sent to them by Jenner himself.

Of that branch of the expedition which was destined for Peru, it is ascertained that it was shipwrecked in one of the mouths of the River de la Magdalena; but having derived immediate succour from the natives, from the magistrates adjacent, and from the Governor of Carthagena, the Subdirector, the three members of the Faculty who accompanied him, and the children, were saved, with the fluid in good preservation, which they extended in that port, and its province, with activity and success. Thence it was carried to the isthmus of Panama, and persons, properly provided with all necessaries, undertook the long and painful navigation of the River de la Magdalena: separating, when they reached the interior, to discharge their commission in the towns of Teneriffe, Mompox, Ocana, Socorro, San Gil y Medellin, in the valley of Cucuta, and in the cities of Pamplona, Giron, Tunja, Velez, and other places in the neighbourhood, until they met at Santa Fe: leaving every where suitable instructions for the members of the Faculty, and, in the more considerable towns, regulations conformable to those rules which the Director had prescribed for the preservation of the virus; which the

Viceroy affirms to have been communicated to *fifty thousand* persons, without one unfavourable result. Towards the close of March 1805, they prepared to continue their journey in separate tracks, for the purpose of extending themselves with greater facility and promptitude over the remaining districts of the Vice-royalty, situated in the road of Popayan, Cuenca, and Quito, as far as Lima. In the August following they reached Guayaquil.

The result of this expedition has been, not merely to spread the vaccine among all people, whether friends or enemies; among Moors, among Visayans, and among Chinese; but also to secure to posterity, in the dominions of his Majesty, the perpetuity of so great a benefit, partly by means of the central committees that have been established, as well as by the discovery which Balmis made of an indigenous matter in the cows of the valley of Atlixco, near the city of Puebla de los Angeles; in the neighbourhood of that of Valladolid de Mechoacan, where the Adjutant Antonio Gutierrez found it; and in the district of Calabozo, in the province of Caracas, where Don Carlos de Pozo, physician of the residence, found it.

A multitude of observations, which will be published without delay, respecting the developement of the vaccine in various climes, and respecting its efficacy, not merely in preventing the natural small-pox, but in curing simultaneously other morbid affections of the human frame, will manifest how important to humanity will prove the consequences of an expedition which has no parallel in history.

Though the object of this undertaking was limited to the communication of the vaccine in every quarter; to the instruction of professors, and to the establishment of regulations which might serve to render it perpetual; nevertheless, the Director has omitted no means of rendering his services beneficial, at the same time, to agriculture and the sciences. He brings with him a considerable collection of exotic plants; he has caused to be drawn the most valuable subjects in natural history; he has amassed much important information; and, among other claims to the gratitude of his country, not the least consists in having imported a valuable assemblage of trees and vegetables, in a state to admit of propagation, and which, being cultivated in those parts of the peninsula that are most congenial to their growth, will render this expedition as memorable in the annals of agriculture as in those of medicine.

and humanity. It is hoped that the Subdirector and his coadjutors, appointed to carry these blessings to Peru, will shortly return by way of Buenos-Ayres, after having accomplished their journey through that Vice-royalty, the Vice-royalty of Lima, and the districts of Chili and Charcas; and that they will bring with them such collections and observations as they have been able to acquire, according to the instructions given by the Director, without losing sight of the philanthropic commission which they received from his Majesty, in the plenitude of his zeal for the welfare of the human race.

§ 2. *Extract of a Letter from — Merry, Esq., British Minister to the United States of America, to a Physician in London; dated Lancaster, Pennsylvania, September 29, 1806.*

“ I TAKE the liberty of sending you a small quantity of the seed of the *chenopodium anthelminticum* of Pennsylvania. I am told that the virtues of this seed are not known in Europe, and but lately in its native country. If you, my dear Sir, think it worthy your attention, and will favour me with your opinion whether it may be serviceable in our country, I will take such measures as may be necessary for its cultivation in England, and for securing the seed, to bring over with me next spring.

“ I inclose a memorandum of the manner it is administered in this country.”

Chenopodium Anthelminticum: Jerusalem Oak.

“ This plant has been found, by repeated experiments, to be so certain and so safe a remedy for destroying worms in the human species, that it is now become officinal.

“ Half a tea-spoonful of the seed, given on a piece of bread and butter, or with molasses, &c., is a sufficient dose for a child of eight years of age. The dose should be repeated every morning for a week, if necessary.

“ The oil, extracted from the plant and seeds, is more powerful than the seed. The dose is regulated according to the age of the patient. Two or three drops on a piece of loaf sugar are sufficient for a child of eight years.”

Remarks by the Editor.—There appears to be an error in supposing that the *chenopodium* has only lately come into use in America as an anthelmintic; or, that its virtues

are altogether unknown in Europe, though it has probably not been employed in this part of the world; unless, indeed, the assertion of Saunders be well founded, that the *semen santonicum*, or worm-seed of the shops, is the produce of a species of *chenopodium*. This opinion is adopted by Murray, who, in his *Apparatus Medicaminum* (vol. iv, § 456), has given a botanical description of the plant, and refers to the writers on the subject; among others, to *Chalmers* (*Diseases of South Carolina*, p. 71). It is mentioned also by Dr. Barton, in his *Collections towards a Materia Medica of the United States*, part i, p. 38-60; and by Dr. Mease (*Phil. Med. Museum*, vol. ii), who observes, that the essential oil of the seeds is equally or more powerful than the seeds themselves.

PS. We learn that a quantity of the seed of the *chenopodium anthelminticum* has been sent to Dr. G. Pearson from America, which will be distributed, on application, to such gentlemen as chuse to cultivate the plant in this country.

§ 3. *Of the Nature of the Air derivable from Water.*

WATER contains air, as air contains water. *Humboldt* and *Gay-Lussac* found, that the air expelled from water by boiling, contains more oxygen than atmospheric air, but that the quantity varies at different periods of the process.

Water, on being heated, gave out at

first air which contained of oxygen 23 per cent

At a short period afterwards - - - 27

At a third period - - - - - 30

And at the moment of ebullition - - - 32

The air furnished by snow contains as much as 34 per cent of oxygen.

§ 4. *On the Absorption of Azote in the Respiration of Vegetables.*

VEGETABLES, as well as animals, absorb azote in the act of inspiration, and exhale it in expiration, as appears from the following experiment.

One hundred parts of the air expired by plants, mixed with three hundred parts of nitrous gas, left a residue of from one hundred and ten to one hundred and twenty;

which proves that the expired air contained a large quantity of pure air or oxygen, together with a small portion of azote. This azote combines itself equally with, and enters into the composition of, the gluten and other products of vegetables which contain a large quantity of azote.

§ 5. *On the Virtues of Oxygenated Water.*

M. ODIER, of Geneva, observes, that he has been long in the habit of prescribing this water with good effect in cases of hysteric spasms and cramps, particularly of the stomach and intestines. He has found it equally serviceable in affections of the chest, that were of an asthmatic, rather than a phthical, nature. It is also useful, he says, as a tonic, in cases of debility following fevers, and as a diuretic in anasarca and other species of dropy.

The oxygenated water has neither taste nor smell; the oxygen is not combined with it by the intermedium of any base, but simply by the force of compression: hence it is necessary to swallow it quickly when poured out of the bottle, and to keep it very closely corked. Water can be made to absorb in this way about half its bulk of oxygen gas. M. Odier remarks, that, when the oxygenated water produces dysenteric symptoms, this effect may be removed by water similarly impregnated with hydrogen.

§ 6. *On Tinned Utensils for Domestic Purposes.*

A GREAT deal of prejudice exists with regard to the adulteration of tin coatings to copper vessels, by the admixture of more or less of lead with the tin, from motives of cheapness. A number of experiments have been lately made by the celebrated Spanish chemist M. Proust, which shew that there is little or no foundation for the fears which are commonly entertained on the subject. These experiments lead to the following conclusions.

1. Confectioners may continue to use untinned copper vessels, provided they adhere strictly to the rules of their art with regard to cleanliness.

2. Every measure which tends to oblige them to employ tinned vessels will turn out to be illusory; as the heat necessary for the greater part of their compositions destroys the tinning in a few days. M. Proust caused different sweetmeats to be prepared under his own eye, in vessels coated with fine tin; but the workman could not succeed.

Some of the preparations were burnt: the tin was detached by the wooden spatula employed in stirring the mixture, and the copper laid bare.

3. The tinning that is adulterated with equal parts of lead is not attended with any danger; as lead alloyed with tin is neither soluble in lemon juice nor in vinegar,—the two acids the activity of which is most to be feared: the tin, in this case, being more oxidable than lead, becomes dissolved exclusively in these acids, and prevents the latter from being attacked; while the lead cannot appropriate to itself an atom of oxygen, without being deprived of it at the same instant by the tin.

4. Lead, alloyed with equal parts of tin, never becomes oxidated and dissolved before the latter. The same alloy taken internally, and in a much larger dose than could be swallowed by a whole family in any case, even supposing that all the tinned vessels in the house should not last for eight days, is not of the least detriment to the health. No disadvantage, therefore, can arise from the usual practice of workmen in alloying their tin with one third, or a quarter, of lead. And the same is true of cups and other vessels made chiefly of tin or pewter, in which there may be a mixture of lead.

In consequence of this report, made to Government by M. Proust, two commissioners were appointed to inquire whether acid liquors kept, for a longer or shorter time, in tin vessels with the usual alloy of lead, really became impregnated with any portion of the latter, so as to threaten to be injurious to health. They chose for the purpose, out of more than a hundred vessels that had been seized and condemned by the police, such as appeared to have the largest quantity of lead in their composition, and which were the most corroded by moisture. They suffered acid liquors of all kinds to remain in them for four days together, and then examined the liquors with the greatest precaution. The result of their experiments was, that neither vinegar, verjuice, oranges, cherries, gooseberries, sour milk, &c., became impregnated with any particle of lead, discoverable by the tests of sulphate of potash, hydro-sulphuretted water, liver of sulphur, or any other test; but most of them took up a small portion of tin. The consequence of these trials was, that the seized vessels were restored to their owners.

§ 7.

THE third meeting of the members of the *Vaccine Club* was held, December 4, 1806, at the British Coffee House, Charing Cross, WILLIAM DEVAYNES, Esq., M.P., in the chair.

The minutes of the proceedings of the Institution since the last meeting being read,

Mr. Millington, one of the governors of the Institution, gave an account of a case of small-pox after vaccination, which lately occurred in his own practice, the particulars of which are as follow.

“ About three weeks ago I was requested to visit a young girl about eight years old, that had been ill all night with great fever and restlessness, and some delirium. When I saw the patient, she complained of great pain in the head, dimness of sight, loss of appetite, and extreme lassitude: her skin was burning hot—tongue furred: she was unable to stand; had quick pulse, and great nervous trembling. I enquired if she had had the small-pox. They answered, no; but that she had been vaccinated, about seven years ago, by Mr. Ring, of Swallow Street, and had gone through that disease completely; so that they thought her quite safe from the small-pox. I suspected she was then labouring under the variolous fever, but suspended giving my opinion at that time. On the following day I found the child much better, the fever greatly abated, and distinct red eruptions appeared: I then saw the child had the small-pox. The eruptions continued to increase, and, on the fifth day, some of them had pus formed in them. On that day Mr. Ring saw the patient, and hesitated to acknowledge it to be small-pox. On the same day, Mr. Robinson, of Duke Street, Grosvenor Square, saw the patient, and declared he thought it to be a mild small-pox; and took some of the matter for the purpose of inoculating some patients with. The matter was taken from a pustule on the wrist, on the fifth day of the eruption. On the eleventh day after the insertion of this matter, I saw one of the patients, a child about eight months old, labouring under the variolous fever: the eruptions on that day were out pretty freely, and the child appeared likely to have a heavy crop of pustules. On the fifteenth day I again saw the child, and found the eruptions very numerous, especially about the breech: the mother ex-

pressed her fears about the child's safety. In the same family that the child eight years of age belongs to, two children had been inoculated for the small-pox by me; these two children had neither been vaccinated nor inoculated for the small-pox before; but a third child of the same family had been vaccinated on the outside of the leg, about two years before, by Dr. Thornton. This child was inoculated with small-pox matter, in both arms, with the same matter as the two younger children. The arms of all the three children continued to inflame much alike, up to the eighth day; and on the ninth day the two younger children sickened with the small-pox. But the child that had been vaccinated two years before continued unaffected, and the inflamed punctures on that child's arms died away: this child continued to live and sleep with the two younger children through the whole of the disease, without the indisposition. The eldest daughter of eight years of age, above alluded to, also lived together with the other three children, and her indisposition came on about a fortnight after the other two children had got well. So it appears that the child vaccinated seven years ago was susceptible to the variolous infection, while the child that had been vaccinated only two years was unsusceptible to variolous infection.

" Charles Street, Middlesex Hospital,

" Dec. 6, 1806."

Dr. Nelson communicated the following anomalous case of vaccine inoculation.

" On the 9th of July a child of Mr. George, of Tyler Street, was inoculated with matter of the eighth day, from a well-marked vaccine vesicle on the arm of Elizabeth Hill, No. 2918 on the register of the Institution.

" In four hours after inserting the matter (by three punctures made in a triangular direction on each arm), a circular inflammation of about an inch in diameter was produced on the inoculated parts, and, by the next morning, had extended to nearly twice that size; when a blister, occupying nearly one-third of the inflamed surface, was formed on every puncture. These blisters were ruptured on the third day; and the inflamed circles, before described, surrounded with tumor and hardness of the integuments, were converted into ulcers, which continued open near a fortnight. By this time the tumor and hardness had quite

disappeared; and the ulcers were covered with irregular yellow scabs. It was a fortnight longer before the scabs fell off. No scars remained. The child has since been re-inoculated, and passed through the vaccina in a regular way."

A conversation then took place on the question of the degree of security against the small-pox afforded by vaccination. The gentlemen present were particularly requested, 1st, to point out any known circumstance on which the failures could have depended, in the instances of *Mc Pherson* and the two *Mabers*, as recorded in the Minutes*.—2dly, To mention any doubts they might entertain of these patients having gone through the distinct cow-pox in the first place, and the small-pox in the second; but it was agreed that the vaccine-pocks not only proceeded in the most distinct manner, leaving scars, but that there was even vaccine constitutional affection clearly announced by symptoms in two of them; that, as a proof of the distinctness of the disorder in the two *Mabers*, they had been selected for matter to inoculate five children in one family by Dr. Pearson, who all took the cow-pox, and afterwards resisted the small-pox upon variolous inoculation; that the patient who afforded the matter for the inoculation of the two *Mabers* (*Burrell*) had also resisted the small-pox on re-inoculation. Considering these failures in conjunction with the many others equally well established, it was concluded, "That it was but justice to the public to declare the chance there was of persons remaining susceptible of the small-pox, after vaccination in apparently the most effectual manner. It was agreed, that, in the present state of knowledge of the subject, there were no means of obtaining security but by a second inoculation, instituted in the most efficacious manner. It was impossible to estimate, on probable grounds, the *proportion* of persons liable to the small-pox after vaccination; but there had been very sufficient evidence that the proportion of such susceptible persons was at least fifty times greater than had ever been pretended to have happened after variolous inoculation; for the best evidences in this country, viz., Dr. Archer, Baron Dimdale, Sir W. Watson, and Dr. Woodville, had all declared they had never seen a case of small-pox occur-

* See page cxv *Miscel.* of our last volume.

ring twice in the same person : hence it was concluded, and it appeared in history, that the opposition to variolous inoculation, for some years after its introduction, was not so much on the ground of insecurity from the practice, as is at present the case with regard to vaccine inoculation. It did not, however," it was remarked, "appear probable, from the result of practice at this Institution, that more than one in ten of the asserted cases of failures was really admissible; the rest being unproved in some cases, and obviously wilful or ignorant misrepresentations in others. On the other hand, however, it was not to be supposed that one-half of the persons liable to small-pox after vaccination was really yet ascertained; and had it not been for the epidemical small-pox in the preceding year, but a small proportion of the failures which had already occurred would have been known."

The statements published by the writers in general upon the subject, both advocates and opposers of the new practice, were commented upon, and shewn to be in many respects unwarranted, according to the practice of this Institution. "Very few of these authors," it was observed, "had possessed the requisite opportunities of information, and their evidence was consequently of little value; for at the most, on one side, it only proved that not one out of several hundreds had yet taken the small-pox after vaccination, many of whom in all probability would have done so but for previous cow-pock inoculation: and this party had not shewn a disposition to communicate adverse cases; for the public had, for the most part, got possession of these by other observers. Many of this party, too, had displayed animosity, cavilling, and unreasonable scepticism, with regard to the authors of adverse cases; in particular, it was worthy of notice that some of the societies which had been the most extensively engaged in vaccination, and some persons of extensive experience in the practice, had not yet published their cases of failures, although it was a matter of notoriety that such cases had occurred in as great proportion at least as in the practice of other persons and societies. There was another injustice done to the public by the too strenuous advocates of the practice; which was, that of quoting the authority of persons of celebrity in medical practice in general, as professed testimonies of experience in vaccine inoculation; some of whom,

whatever their private sentiments might be, had not as yet given any such public testimony; and with regard to the rest, for the most part, it was well known that their experience was extremely limited in the practice, and of course the employing their names in this manner was delusive to the public. On the other side, although it was certain that many failures had occurred which had been concealed, it was equally certain that not one in ten of the asserted cases of failure had been proved by legitimate evidence to have really taken place; indeed, many of them were stated in such terms, as to carry with them their own refutation. In this state of things the most judicious course would be, to form a judgment from a few of the most experienced and candid authors on each side; especially, however, those who possessed experience to enable them to judge from their own evidence, and to reject the multitude of writers as incompetent.

“Contemplating the subject with these means of information, the conclusions,” it was said, “must be very different from those which had been in general published; and it would appear, 1st, that experience had sufficiently shewn, that, in persons duly vaccinated, a very large proportion were rendered thereby unsusceptible of the small-pox.—2d, That the proportion of susceptible persons at present assigned (estimated only from the failures which have been hitherto recorded) must be widely different from the real proportion of susceptible persons; for the obvious reason, that in all probability a great number of the vaccinated had not yet been exposed to variolous infection.—3d, That there was especially a fallacy in judging of the efficacy of vaccination from the diminution, or even disappearance, of the small-pox, since the introduction of vaccine inoculation into towns of comparatively small population. For example, it was not unreasonable to conceive that, in places where vaccination was generally practised, the small-pox might disappear for a time, although not more than ninety-nine out of each hundred had been rendered unsusceptible of the small-pox: for there might be but a small chance of the variolous infection being imported for some years; and, if it was imported, there was also but a small chance of its infecting any one of the few susceptible persons: while the chance of infection being imported must become still less as vaccine inoculation was

generally extended throughout different towns which had an intercourse with one another. On this view of the subject, it was easily conceivable that a greater proportion of failures should occur in London than elsewhere. Besides, in many of the towns abroad, the new practice might be considered as in a great measure compulsory, and the subjects not at liberty, from the nature of their government, to act and speak according to their own sentiments: however, accounts of failures had already been received from India, and might be reasonably expected hereafter from other places.

“ It is, in truth, only in the times of an epidemic small-pox in a large population, that the real efficacy of vaccination can be determined. This test existed in London in the year 1805; and the consequence was, the taking place of the small-pox in many persons who had undergone the cow-pock in a manner believed by the best judges to give security: hence the judgment should be aware how incompetent the evidence of persons of limited experience, either in regard to time or extent, is to determine the question. It is not to be determined merely by number, but by the quality of the evidence. A number of names,” it was observed, “ were almost as easy to be procured on this subject, as signatures to a political advertisement; and when it is considered, that many of those whose names have been made use of on this occasion have neither had opportunities, nor given themselves the trouble of studying the matter, in a manner requisite to enable them to form a judgment on it, the testimony in the two cases might, perhaps, be placed upon nearly an equal footing. The evidence of a single person informed by long experience, on this as on many other questions, is worth that of a whole theatre of those who are usually called upon for a decision. If this representation, then, be just, very different measures of practice must be pursued; and if the public are to be made acquainted with the real merits of vaccination, very different information must be communicated from that at present given, by either the outrageous advocates of the new practice, or the opposing party.

“ To judge from the experience of this Institution, it would appear, 1st, that, considering the advantages of vaccination, even supposing that it could not be so instituted as to give security, by one inoculation, to more than

ninety-nine in a hundred (though it is infinitely improbable to be so small), it is still for the political interest and individual happiness of human society to be adopted; provided it be so on certain conditions: these conditions relate principally to due vaccination by competent persons in the first instance; and secondly, that, considering we have yet to learn how to excite the cow-pock so as to give absolute security in every instance, the only means known of giving that security should be proposed, viz., a subsequent inoculation, as set forth in a paper lately printed by this Society. By adopting this plan, which is indeed a trifling sacrifice, the small-pox may with certainty be avoided in individual persons, and wholly extirpated in many societies of the human race.

“ Instead of viewing the subject in the above manner, and taking precautionary measures accordingly, many of the friends of vaccination,” it was remarked, “ have been willing to flatter themselves, and to persuade the public, that the proportion of failures is infinitely smaller than is here represented, and is on the same footing as the small-pox occurring a second time. On which it is only necessary to observe, that the occurrence of the small-pox a second time in the same person has not been seen by four of the best evidences in the world, both in point of judgment and extensive practice; viz. Dr. Archer of the Small-pox Hospital, Baron Dimisdale, Sir William Watson, and Dr. Woodville.

“ Finally, on the question of diseases subsequent to the cow-pock, it hitherto seemed probable that some complaints have been really produced by it, but which, if more frequent, are of much less magnitude than those subsequent to the small-pox.”

Such was the statement given of the present circumstances of the two practices, which it was, however, desired might be considered as merely provisional; for but a part of the subject had been as yet investigated*: and subsequent investigations might render the practice either more or less favourable than at this time.

* The proofs of the yet imperfect history of the vaccine affection may be found in the anomalous cases described in the *Med. and Chir. Rev.* for November last.

Some of our readers may, perhaps, not be unwilling to learn the occasion on which the testimony above alluded to, respecting the occurrence of the small-pox a second time in the same person, was given. It was as follows:—Dr. Baylies, a British physician, had been invited to Berlin by the King of Prussia, in the year 1774, in order to introduce the practice of inoculation into that city. One of the patients inoculated by Dr. Baylies, after going through the process in the most regular manner, was, after an interval of nearly two months, taken ill of a malignant fever attended with an eruption, which came out on the thirteenth day, and was said by some practitioners to be small-pox. Convinced, both by the regular progress of the variolous inoculation, and by the characters of the second eruption, that there was no foundation for such a supposition, Dr. B. stated the case fully to *Sir William Watson*, Physician to the Foundling Hospital, *Dr. Archer* of the Small-pox Hospital, and *Baron Dimsdale*; all of whom concurred in opinion, that the disease was not small-pox, but a malignant fever attended with a symptomatic eruption; at the same time declaring, in the following terms, their never having met with small-pox a second time in the same person*.

——“ From the great experience I have had in inoculation, I have seen in no one instance that the patient has had the small-pox a second time; though, when the eruptions have been very few, in order to be assured of their having had the disease, I have frequently caused the patient to be punctured a second and even a third time with active variolous matter; but always without producing the small-pox a second time.

“ The possibility of having the small-pox a second time, whether after the disease has been brought on by natural contagion or by inoculation, is not credited here by any persons whose testimony is considered of any importance in matters of this sort.

“ *WILLIAM WATSON, M.D.,*

“ Vice-President of the Royal Society, Physician to the Foundling Hospital, and Member of the Royal College of Physicians.

“ *London, April 14, 1775.*”

* See ‘ Facts and Observations relative to Inoculation in Berlin, and to the Possibility of having the Small-pox a second Time. By William Baylies, M.D., &c.’ Edin., 1781.

—“ I have never seen this disorder, in all my practice, twice in the same person, though I have been physician to the hospitals for small-pox and inoculation above six and twenty years; and have had under my care, without reckoning private patients, above twenty-six thousand.

“ I am, Sir,

“ Your most obedient humble servant,

“ EDWARD ARCHER.

“ *London, April 8, 1775.*”

—“ In the whole course of my practice, which it is well known has been extensive, I never knew a single instance of any one having the natural small-pox after having been inoculated.

“ Nor have I ever known any person to have the disease a second time in the natural way.

“ I shall not pretend to decide on what may have happened to others, but this I aver to be true so far as relates to my own experience.

“ DIMSDALE,

“ Baron of the Russian Empire, Body Physician and actual Counsellor of State to her Imperial Majesty the Empress of all the Russias, and F.R.S.

“ *London, April 11, 1775.*”

§ 8. *Experiments on the Formic Acid.*

MR. Suerfen, of Kiel, has made public some experiments of his upon the *formic* acid, from which he infers, that, notwithstanding what has been said upon the subject by Fourcroy, Vauquelin, and Deyeux, the identity of this acid with the acetous is not proved.

§ 9. *Nature of the foul Air in oil Cisterns.*

SOME experiments have lately been made at Amiens to ascertain the nature of the foul air in oil cisterns; and which have shewn it to consist of azotic gas, oxygen gas, and carbonic acid gas, in the proportions of 86 : 8 : and 6.

MEDICAL REFORM.

TO THE EDITORS OF THE MED. AND CHIR. REVIEW.

Gentlemen,

THE enclosed paper contains the second list of subscribers to medical reform. You will oblige me by publishing the names, and I will send more for insertion in your subsequent numbers. When the business is finished, and accounts examined, a regular statement of the receipts and expenditure will, of course, be made out for the satisfaction of the profession.

I beg leave to observe, that if the reform is to be managed at the expence of the Faculty, which would redound much to their credit, and probably contribute to their advantage, no public steps can be taken until an *adequate fund* is provided, to enable those who conduct the reform to employ a solicitor to draw up the bill—to procure law opinions on a variety of doubtful points—to defray the fees—and employ counsel, if necessary, to assist it through both Houses of Parliament. It is, therefore, particularly to be wished, that all who favour the undertaking would encourage it, by furnishing their quotas without delay, and exerting their influence to procure subscriptions.

I am informed that several of my old correspondents think it unnecessary to acknowledge the receipt of the outline, concluding that silence will be taken as a proof of their approbation of the plan. It is, however, so desirable to get a full return from all parts of the United Kingdom, that I hope my brethren will have the goodness to send answers to me as soon as they can conveniently, that their sentiments may be made known to those in power who have engaged to support medical reform, when they are convinced that the Faculty are anxious for it.

As the session has already commenced, it must be the wish of every friend to the undertaking to get the bill introduced at an early period, that time may be given for a full discussion of its principles, and to obviate objections.

I have the honour to be, Gentlemen, &c.,

EDWARD HARRISON.

Dec. 13, 1806.

Amount of former subscrip-				Dr. Curry, Chester.....	1	1	0
tions.....	26	5	0	Dr. Curry, jun. do.....	1	1	0
Dr. Wilson, Grantham...	1	1	0	Dr. Cumming..do.....	1	1	0
Mr. Barker, Spillsby	1	1	0	Dr. Larden...do.....	1	1	0
Mr. Turner, Caistor.....	1	1	0	Dr. Skirrett, Newcastle,			
Mr. Bell, Great Grimsby .	1	1	0	Staffordshire.....	1	1	0
Mr. Thackeray, Cambridge	1	1	0	Mr. Coombe.....do....	1	1	0
Dr. Warden, Warwick...	1	1	0	Mr. Gardener.....do....	1	1	0
Dr. Ferriar, Manchester..	1	1	0	Mr. Mayer.....do....	1	1	0
Mr. Gibsondo.....	1	1	0	Mr. Wild.....do....	1	1	0
Mr. Penneck, Penzance ..	1	1	0	Mr. Monedo....	1	1	0
Mr. Dennisdo.....	1	1	0	Mr. Bentleydo....	1	1	0
Mr. Roberts.....do.....	1	1	0	Mr. Pettener, Louth.....	1	1	0
Dr. Mackintosh, Colchester	1	1	0	Mr. Gilliat, Horncastle...	1	1	0

“ *Belfast, October 15, 1806.*

“ Sir,

“ Immediately on receiving your letter, I called a meeting of the medical gentlemen of this town, and laid before them your printed plan for medical reform. I have the honour of enclosing to you their sentiments upon that important business.

“ I am, Sir, with respect,

“ Your very obedient servant,

“ ROBERT Mc CLUNEY, Secretary.”

“ We highly approve of the course of study proposed for the physician, and the period at which he is to commence practice, provided he would devote at least one year to practical pharmacy; but we consider it as indispensable with a thorough and radical reform, that there should be *a medical board* in each metropolis of the United Kingdom*, before which every graduate should be examined previous to his entering on practice.

“ As to the education of the surgeon, we consider two

* We are of opinion, that not only will there be a necessity for establishing *medical boards* in the three capitals of the United Kingdom, but that subordinate boards should be appointed in every county, and under them, perhaps, individual practitioners in most market towns, for the purpose of licensing midwives and druggists—examining apprentices—granting certificates to lunatics suffered to be at large—reporting upon epidemical disorders—superintending workhouses, jails, &c. &c.—with many other offices in their respective districts, when the regulations are made complete.

years a space too limited for acquiring a complete knowledge of anatomy and surgery; and therefore propose the term of three years of an apprenticeship, and three years for attending anatomical and medical lectures, dissections, and hospitals; and after having obtained a diploma, to be examined by a surgical board.

“ We approve of the plan of education for the apothecary, provided he is afterwards to undergo an examination as to his proficiency.

“ We think no female should be permitted to practise midwifery, who is not certified for by two regular accoucheurs.

“ We are of opinion that physicians, as well as every other branch of the profession, should be entitled to recover their fees by the usual legal means.

“ We think it proper that a register should be kept of all medical practitioners in the United Kingdom, but must withhold our opinion respecting a fine being paid on entering on practice, until we are informed of the amount and proposed disposal of such fine; for although we conceive that it might be attended with beneficial effects, if a moderate sum were to be paid on the commencement of the practice of every department of the profession, yet we are of opinion that such sums should not be disposed of in any other manner than for the establishment of a fund for the relief of the widows and orphans of medical men, who may require such assistance; or for such persons in the profession as by age, disease, or other infirmity, may appear to be necessitous.”

“ *To Dr. Harrison, Horncastle, Lincolnshire.*

“ *Stirling, October 15th, 1806.*

“ Sir,

“ Some time ago we had the honour to receive your circular letter on medical reform, which was handed to all the regular Faculty here, whether in or out of practice; and we have talked and talked of meeting, to draw up some sort of answer to your obliging communication: but no one seems willing seriously to set about calling the meeting. And as time does not consult our apathy, the subscribers beg leave to reply for themselves.

“ To the first query:—We do not well know what to

call our district: if it be only the town of Stirling, we have no quacks in it worth notice. Some of the clergy, and we believe most of our midwives, who generally arrive too expeditiously at their title to know any thing of the matter, dabble a little in the healing art; but they deal chiefly in simples, and perhaps do little harm. If, however, our district extend ten miles around, we have in that space a notorious empiric or two, who, more dangerous than a mad dog, ought certainly not to be allowed to go at large.

“ 2. Some of those called regular practitioners, are men who, in the earlier part of their lives, have not received a classical education. They know nothing of Greek, a language surely not useless to the regular practitioner; and they are shamefully ignorant of Latin. *And this evil is increased to an alarming degree, by the facility with which some universities bestow degrees in physic on almost any body who can afford to pay their fees, not only without any previous trials, but even without so much as seeing the candidate.* This calls loudly for reform, as it introduces many very ignorant men into the world with the title of M.D.; and as these people are seldom deficient in assurance, we see them often outstrip others of real science and more modesty, who languish in obscurity and penury while the others roll in affluence. The world cannot judge of medical knowledge, but generally accord to men such characters as their impudence pleases to assume.

“ 3. Regular quacks, if we may be allowed the expression, or those who live entirely by quacking, can hardly be expected to thrive in so poor a country as Scotland, and we have none of them here.

“ 4. The physicians and surgeons of this district perform also the humble duties of the apothecary; and, when they look at the *res angustæ domi*, find all little enough. Their medicines are generally, we believe, pretty good. But almost every grocer sells drugs, to the great danger of their employers. These people are no judges of the quality of medicines: they generally dispense such as are very bad, buying up the worst to enable them to sell cheap, and often giving one thing for another. Salt-petre, for instance, we have sometimes known to be given for Glauber's salts, to the great injury of the patient. This certainly ought to be put a stop to. Perhaps a very high stamp duty, amounting to a prohibition on those who presume to

fell drugs by retail without being bred to the business, and very great encouragement given to the informer, would be an effectual remedy for this abuse of the public.

“ 5. If those who are called regular practitioners are prohibited from taking *poor illiterate lads as apprentices for two or three years*, whose parents have not the means of giving them a liberal education, you will strike at the root of the greatest mischief the regular Faculty have to fear in Scotland. These creatures, on the strength of *sweeping an apothecary's shop, and beating his mortar, daily take upon themselves the practice of physic.*

“ With best wishes for your success in so laudable an undertaking, we have the honour to remain, Sir,

“ Your most obedient servants,

“ D. Aitken, M.D., Royal Navy
John Forrest, M.D.

John Henderson, M.D. Retired from business

Robert Moir. Retired from business

James Dinmore, Surgeon.”

“ Sir,

“ The honour of your printed plan of a medical reform I have received, and have given it what publicity I was able, by causing it to be inserted in the several provincial papers of this country. The regulations proposed to be adopted appear to be effective and necessary. The dignity of a valuable profession is nearly extinguished by the intrusion of unqualified and ignorant practitioners: a well digested plan, therefore, such as is sketched in your outline, cannot but be highly desirable to every one who regards the order and decencies of society.

“ May I be allowed to suggest the opinion, that female midwives, for their qualification, should have a certificate signed not only by a regular practitioner in the art, but also by a regular physician? The reasons, I think, are sufficiently obvious.

“ The question, ‘ Whether physicians shall be entitled to recover their fees by the usual legal means,’ is answered decidedly in the affirmative by all with whom I have been able to consult. In the country, fees are not usually paid till the termination of the disease; and the practitioner is often defrauded of his reasonable remuneration by the meanness of some, who, knowing that he can recover no-

thing, affront him, by making a merit in offering what is beneath the acceptance of a man of probity and feeling. Executors, likewise, thinking they ought to discharge no debts but such as can be legally demanded, sometimes turn the physician round, after a long and anxious attendance. Physicians have not, like counsellors, an intermediate agent to secure and recover for them their dues. It is now absurd to suppose that well educated men practise the science of physic for charity only; as was the case of old, when all physicians were monks.

“ The intermediate state of conduct between the doctor and patient often causes disagreements and jealousies among neighbours, which a regular rule in law would effectually wash away.

“ Nor would the being able to recover fees by legal means in the least affect the present more delicate method; for where fees are properly offered and accepted, they of course would be considered as a full discharge to the time of such acceptance.

“ I have the honour to be, with much regard,

“ Your faithful and obedient servant,

“ W. TURTON.

“ Swansea, October 22, 1806.”

§ 10.

WE some time ago mentioned the increase of pay granted by his Majesty to the medical officers of the army*, and expressed our hopes that similar advantages would be extended to those of the navy establishment. We are happy to have it in our power to state, that regulations to this effect have lately been made, and of the following tenour.

Regulations relating to Medical Officers serving on board Ship.

Surgeons' mates to be in future called *assistant surgeons*. No person to be appointed *assistant surgeon* who shall not have been found qualified, on examination, to serve as *surgeon*, or as first *assistant*. Pay of assistants six shillings and sixpence per day; half pay, two shillings after two years service, and three shillings after three years service. — *Assistants* must furnish themselves with such surgical in-

* See our 11th vol., p. vi, *Miscellaneous*.

struments as the Commissioners for Sick and Hurt shall direct.

Surgeons of ships: under six years service (three of which, at least, they must have been *full surgeons*), full pay, ten shillings per day; half pay, five shillings. After six years service, full pay, eleven shillings per day; half pay, six shillings. After ten years service, full pay, fourteen shillings per day; half pay, six shillings.

Surgeons employed only in harbour service: full pay, ten shillings per day; half pay, according to the time of service. *Surgeons to hospital ships*: full pay, fifteen shillings per day; half pay, as in other cases.

All *surgeons*, except those employed only in harbour duty, after twenty years service on full pay (including not more than three years as mate or assistant), eighteen shillings per day, and may retire on a half pay of six shillings per day: but if from ill health contracted in the service, after twenty years actual service, half pay, ten shillings per day.

Surgeons on board ship to provide their own instruments.

Hospital Department.

All *assistants* in hospitals to be called in future *hospital mates*, with a pay of six shillings and sixpence per day when employed at home, and seven shillings and sixpence on foreign stations: with two shillings per day half pay, after two years actual service on full pay; and ten shillings and sixpence lodging money, when not accommodated within the hospital.—Widows of such as shall have served abroad, and shall die on full pay, to be allowed a pension of sixteen pounds per annum; and the children of such, and also the widows and children of such as shall die on half pay, to have such allowances as the Lords of the Admiralty shall think fit.

Dispensors of hospitals: when employed, full pay, ten shillings per day; half pay, five shillings. Lodging money, twelve shillings per week.

Surgeons of hospitals to be selected from the list of naval surgeons. Full pay, fifteen shillings per day at first, and twenty shillings after ten years service in hospitals. Half pay regulated as that of surgeons of ships. Lodging money, fifteen shillings per week. Time served in hospitals by surgeons, or assistant surgeons, of the navy, to be reckoned as time served on board ship.

Surgeons of hospitals, dock yards, and marine infirmaries, to have the same advantages from long service as those who shall have served on board ship, as above stated.

Physicians to fleets or hospitals. No person to be appointed to these situations without having served as surgeon five years. Daily pay, at first, one guinea; half pay, ten shillings and sixpence. After three years service, full pay thirty-one shillings and sixpence; half pay, fifteen shillings per day. After ten years service, full pay two pounds two shillings; half pay, one pound one shilling per day. Lodging money, one pound one shilling per week.

Widows of physicians and surgeons to be allowed such a pension as the Lords of the Admiralty shall think it right to grant.

Ipswich, December 10, 1806.

TO THE EDITORS OF THE MED. AND CHIR. REV.

Gentlemen,

THE subject of medical reform being for these twelve months before the public, and having given rise to much discussion, it becomes, almost, an indispensable duty to enquire a little respecting the first promoter of this undertaking. As men are actuated by various motives, and too frequently by interested ones, I was anxious (and in this I find I am not singular) to satisfy myself of the general character of Dr. Harrison, President of the Benevolent Medical Society of Lincolnshire, the principal agent in this affair. I felt a stronger inducement to this, from perceiving, in the Medical Journals, several strong inuendos as to the disinterestedness of his intentions; hinting that the public good was, with him, but a subordinate consideration. With the view of relieving my mind from doubts, whether this was truth or merely calumny (being a friend to medical reform), I wrote to Mr. Taylor, secretary to that Society, and received for answer as below; which, for the sake of others entertaining similar doubts, I beg you will have the goodness to publish in the next number of the Medical and Chirurgical Review. It will be but justice towards Dr. Harrison, who, through an active opposition, is suffering for his laudable exertions.

I remain, Gentlemen,

With great respect, your's, &c.

R. HAMILTON.

" To Dr. Hamilton.

" Sir,

" The purport of your letter by yesterday's post appears to me so nearly similar to the following from Mr. Barlow, of Blackburn in Lancashire, that I beg leave to enclose a copy of this letter, and my answer to it, by way of reply to your enquiries concerning Dr. Harrison.

" I have the honour to be, Sir,

" Your very obedient humble servant,

" THOMAS TAYLOR.

" Horncastle, December 4, 1806."

" To Mr. Taylor, Surgeon, Horncastle.

" Sir,

" Though I am an entire stranger, I have taken the liberty of addressing you respecting the medical reform, and doubt not you will excuse this intrusion; more particularly as the subject in question comprises the welfare of every deserving practitioner. As the projected reform first became agitated by Dr. Harrison, of your town, I am anxious to be informed of the circumstances which gave birth to so laudable an undertaking; and how far Dr. Harrison's sphere of practice, as a physician, has been consistent with the plan and resolutions contained in the circular letter; and whether he has usually been in the habits of trespassing on the province of the surgeon or accoucheur. I hope you will excuse this freedom in making these enquiries; but as I find nothing mentioned in the plan or resolutions to prohibit this infringement, I was led to suspect the promoter or promoters of the medical reform to be influenced by motives of self-interest; yet how far I am correct on this head, I do not pretend to determine. If, however, my conjecture be ill founded, I have to request you will set me right.

" I remain your humble servant,

" JAMES BARLOW.

" Blackburn, Lancashire, October 2, 1806."

" To Mr. Barlow, Surgeon, Blackburn, Lancashire.

" Sir,

" In answer to your letter, I have taken the liberty of giving you my opinion respecting Dr. Harrison, of this

place, the gentleman who is attempting to bring forward a medical reform. He is in easy circumstances, and stands very high as a physician in his professional capacity. I have always experienced the greatest liberality from him; and he never wishes to interfere in the province of the surgeon or accoucheur. Had he shewn any disposition to follow the steps of his predecessor Dr. Thorold, I make little doubt that he would have succeeded to the best midwifery in this part of the county. I am fully persuaded, that, in promoting a reform, the Doctor is influenced by no other motive than a desire to promote the good of the public, and increase the respectability of our profession.

“ I remain, Sir, your humble servant,

“ T. TAYLOR.

“ *Horncastle, October 1806.*”

“ PS. Three or four years since, Drs. Harrison and Fawcett founded a lunatic asylum. When first established, I recollect to have seen it advertised once or twice in the Stamford Mercury, and some printed papers have been distributed: these were intended, I believe, chiefly to obviate prejudices. If you take the trouble to enquire of Mr. Samuel Hazard, who frequently visits his brother Colonel Short, of Edlington, near Horncastle, or any respectable person in this neighbourhood, you will find that Dr. Harrison is much respected, both as a man and a physician.”

Was it the circumstance of advertising that induced one of the correspondents in the Medical and Physical Journal (No. 92) to bestow on it the appellation of Empiricism? As advertising has been practised by the generality of those who preside over such institutions, it being the readiest means of conveying information to those concerned (several of whom, it is presumed, live at great distance from the intended asylum), Dr. Harrison cannot justly incur censure for adopting it. Similar advertisements may often be seen, subscribed by respectable professional names. Will any man, on this ground, stigmatize these gentlemen with the epithet *empirics*? Dr. Harrison must, therefore, in my opinion, commit something very different to merit that appellation. Nor does it appear very candid to bring forward an act, even had it been improper, committed to

long ago as three or four years, merely to fling it at the author of medical reform, with an intent to stifle his laudable pursuits.

R. H.

SPRING LECTURES.

DR. Pearson's Spring Course of Lectures on Physic and Chemistry will commence, as usual, the first week in February, at his house, No. 9, Great George Street, Hanover Square, where particulars may be learned, or at St. George's Hospital.

Mr. Gunning, Surgeon to St. George's Hospital, will recommence his Lectures on the Principles and Operations of Surgery on Monday, the 19th of January next, at eight o'clock in the evening. Further particulars may be known at his house, No. 43, Conduit Street, Hanover Square.

LONDON HOSPITAL.—On the 20th of January, Mr. Headington and Mr. Frampton will commence their Spring Course of Lectures on Anatomy, Physiology, and the Principles and Operations of Surgery.—Theory and Practice of Midwifery, Dr. Dennison.—Surgery, Mr. Headington.—Anatomical Dissections and Demonstrations as usual.

Dr. Badham's Spring Course of Lectures on the Practice of Physic, Chemistry, and the Materia Medica, will be commenced on Monday morning, January 5, at eight o'clock.—No. 15, Clifford Street, New Bond Street.

Dr. Clarke and Mr. Clarke will begin their Lectures on Midwifery and the Diseases of Women and Children on Thursday the 22d of January. The Lectures are read at the house of Mr. Clarke, No. 10, Upper John Street, Golden Square, every morning, at a quarter past ten o'clock, for the convenience of students attending the hospitals. For particulars apply to Dr. Clarke, No. 1, New Burlington Street; or to Mr. Clarke, No. 10, Upper John Street, Golden Square.

Theatre of Anatomy, Great Windmill Street.—Mr. Wilson's Spring Course of Lectures on Anatomy, Physiology, Pathology, and Surgery, will begin on Tuesday the 20th of January.

Mr. Taunton will begin his next Course of Lectures on Anatomy, Physiology, and Surgery, on the 31st of January, at his house, Greville Street, Hatton Garden, at eight o'clock in the evening.

LITERARY NOTICES.

DR. Davis, the Translator of Pinel's Treatise on Insanity, is preparing for the press an abridgement of that part of the author's work on Philosophical Nosography which treats of Febrile Disorders.

Mr. Dunne, formerly Surgeon of the Auxiliary British Cavalry in Portugal, proposes to publish, in an 8vo volume, the *Chirurgical Candidate*, or Reflections on the Education indispensable to complete the Military Surgeon or Private Practitioner.

Dr. Gilbert Blane, of Cleveland Row, has been lately appointed Physician in Ordinary; and Dr. William Saunders of Russel Square, and Dr. W. M. Frazer of Lower Grosvenor Street, *Physicians Extraordinary* to his Royal Highness the Prince of Wales.

THE
Medical
AND
CHIRURGICAL REVIEW;
OR COMPENDIUM OF
MEDICAL LITERATURE,
FOREIGN AND DOMESTIC:

CONTAINING
A Copious Account of New Publications
IN
MEDICINE AND SURGERY,
From the Year 1794 to the present Time:

TOGETHER
WITH a VARIETY of MISCELLANEOUS INFORMATION
RELATING TO THE
DIFFERENT BRANCHES OF MEDICINE,
AND THE
SCIENCES CONNECTED THEREWITH.

.....QUE NON FECIMUS IPSI
VIX EA NOSTRA VOCO.....

Ovid.

VOL. XV.

From JULY to DECEMBER 1807.

LONDON:

PRINTED FOR THE EDITORS,
AND SOLD BY T. BOOSEY, NO. 4, OLD BROAD STREET;
BRYCE AND CO., EDINBURGH;
W. GILBERT, DUBLIN;
And all other Booksellers.

Knight and Compton, Printers, Middle Street,
Cloth Fair.

To the Binder.

It is recommended, in binding the present volume, to place the whole of the *Review* part together, and the Miscellaneous at the end; the *Table of Contents* being arranged with this view.

CONTENTS.

ACCOUNT OF NEW WORKS.

COOPER on crural and umbilical hernia.....1	<i>Cooper's</i> first lines of the practice of surgery.....161
<i>Bardsley's</i> medical reports of cases and experiments.....6	<i>Grant</i> tractatus de febre flava.....163
<i>Wilson's</i> essay on the nature of fever 15	<i>Grant's</i> exposition of the conduct and character of <i>T. Dancer</i> , M.D. 163
<i>Moseley's</i> oliver for a Rowland.....25	<i>Grant's</i> reply to strictures upon his essay on the yellow fever, by Dr. <i>Dancer</i>164
<i>Bonn</i> anatome castoris, &c.....35	<i>Duncan's</i> memorial on medical jurisprudence.....174
<i>Facts determining the efficacy of Fowler's mineral solut. in chronic rheumatism</i>37	<i>Geoghegan</i> on the venereal disease..183
<i>Chortet</i> réfutation de la doctrine des crises.....38	<i>Pinel's</i> treatise on insanity.....185, 257
<i>Clutterbuck's</i> inquiry into the seat and nature of fever, p. I. 39, 102, 142	<i>Hamilton's</i> observations on the preparation, &c. of the digitalis purpurea in dropfy of the chest, &c. 200
<i>Facts, &c. on the generation of the opossum</i>50	<i>Andrews's</i> observations on lunar caustic, &c.....210
<i>Lawrence's</i> translation of <i>Blumenbach's</i> system of compar. anatomy. 55	<i>Ellis's</i> inquiry into the changes induced on air by germination 218, 320
<i>Pearson</i> on the effects of various articles of the materia medica in the cure of lues venerea56	<i>Ewell</i> on the laws or properties of matter.....233
<i>Clanny's</i> history and analysis of the mineral waters at Butterby61	<i>Charter of the college of physicians and surgeons of New York</i>239
<i>Lipscomb</i> on canine madness.....63	<i>Percival's</i> works, literary, moral, and medical.....249
<i>Philosophical transactions of the royal society</i> for 1807, p. I. 65, 131	<i>Soemmering</i> icones oculi humani....275
<i>Sinclair's</i> code of health and longevity82, 121	<i>Parmentier</i> code pharmaceutique....281
<i>Rush's</i> inquiry into the functions of the spleen, liver, pancreas, &c....95	<i>Adams's</i> popular view of vaccine inoculation.....285, 336
<i>Hofack's</i> catalogue of plants in the botanic garden at Elgin.....97	<i>Prost</i> coup-d'œil physiologique sur la folie.....301
<i>Decandolle</i> essai sur les propriétés médicales des plantes, &c.....113	<i>Trotter's</i> view of the nervous temperament.....302
<i>Birch's</i> copy of the answer to the queries of the London college of surgeons, &c. on cow-pox.....117	<i>Curtis's</i> account of the diseases of India, in the English fleet and naval hospital at Madras, in 1782 and 1783.....305
<i>Earle's</i> letter on fractures of the lower limbs.....156	<i>Henry</i> dissertatio chemico-medica inauguralis, de acido urico, &c...330

MISCELLANEOUS ARTICLES.

Medical reform.....i, xxxiv, xli, cxi	On the chemical re-action of medicines on each othervii
Answers of the royal colleges to Dr. Harrison's communication.....i	<i>Cadet's</i> mode of preserving vegetable juices and fruits.....viii
Strictures on the method of granting degrees in the northern universities.....v	<i>Dewees</i> on defective menstruation.ix
<i>Hallé</i> on some irregularities of the vaccine inoculationvi	On the electric eel of Surinam.....ix
	<i>Thenard</i> on the acid in urinex
	<i>Caumond's</i> case of an urinary calculus.x

Extraordinary case of suppressed menstruation.....x	<i>Willey</i> on the efficacy of the acetate of lead in hysteria and chorea lxiv
Singular instance of bulimiaxi	The old age of Boerhaave.....lxv
On the chenopodium anthelminticum xii	Case of Superfoetationlxvi
<i>Vauquelin</i> on the different species of cinchonaxii	Instance of an aneurism of the coronary artery of the stomach.....lxvii
Cure of scurvy at sea by the use of limes.....xiv	Extraordinary phenomenon.....lxvii
Nineteenth extract from the minutes of the original vaccine-pock institution.....xiv	Discovery of thirty-two new species of cinchonalxviii
Deaths.....xvi	Destruction of contagion.....lxviii
Notices.....xvi, lv, xcv	Precipitation of metals from alkaline solutions of them.....lxix
Report of the royal college of physicians of London on vaccination xvii	<i>Adams</i> on the matter used for the inoculation of small-pox.....lxix
<i>Deyeux</i> on the blood of persons affected with the jaundice.....xxix	Observations on the chicken-poxlxx
Extract of a letter from Dr. Rogers, of St. Peterburgh, to a physician in London.....xxx	<i>La Grange</i> on the affinities of tannin for alkalies, earths, &c.....lxxi
<i>Geoghegan's</i> thoughts on the regulation of the medical profession xxxvi	Propagation of vaccination in Denmark by two females.....lxxi
<i>Reece</i> on the good effects of acetate of lead in hooping cough, &c. xxxvii	Microscopic examination of the vaccine fluidlxxi
<i>Frydenberg's</i> memoir on the feetangxxxviii	<i>Vogel</i> on the state in which mercury exists, when combined with unctuous matters.....lxxxii
Anecdotes of Dr. <i>Gall</i> and professor <i>Ackermann</i>xxxix	<i>Thenard's</i> memoir on the analysis of sweat, urine, and milk .lxxxii, civ
Performance of the Cæsarean operation a second time on the same subject.....xl	Of the nature of the air in crowded assemblies.....lxxxvi
<i>Haygarth's</i> invention of a female urinalxl	Method of whitening sponges.... lxxxvi
Additional reward to Dr. <i>Jenner</i>xl	On surgeons and apothecaries....lxxxvii
<i>Harrison's</i> letters on medical reformxli, cxi	<i>Wolfram's</i> speculation respecting plica polonicalxxxix
Report of the committee of the senatus academicus on med. reform xliii	<i>Keutsch</i> on frictions of olive oil in the yellow fever.....lxxxix
Resolutions of the committee on medical reformxlvi	<i>Balfour's</i> interesting remarks on sol-lunar influence in regard to the human bodyxc
<i>Lichtenthal's</i> musical doctorxlvi	<i>Shaw</i> on the use of the tobacco bougie in strictures in the urethra xci
Hydatids found in the substance of the tibia.....xlviii	Lamentable case in the practice of midwifery.....xcii
<i>Laennec</i> on the distomus interfectusxlix	Prize subject of the royal college of surgeons, London, for 1808...xciv
<i>Bardy's</i> case of imperforate vagina.....l	A case on medical reform, drawn up for the opinion of Mr. Sergeant Williams, by Greene, Tenant, and Harrison, solicitors.....cxiv
Employment of camphor in disorders of the bladder.....li	<i>Blaine</i> on hydrophobia; with the copy of an original recipe for the bite of a mad dog.....cxv
<i>Cazalet's</i> mode of preserving animal food.....lii	Twentieth extract from the minutes of the original vaccine-pock institution.....cxv
<i>Beddoes's</i> letter to the editorlii	<i>Sawrey's</i> remarks on the cow-pox, &c.....cxxxix
Medical promotions.....liii, xcvi	Singular cure for the gout.....cxxxii
Autumnal and winter lectures.liii, lxxii	
Correspondence.....lv	
<i>Rampont</i> on the state of medical practice in Germany.lvii, lxxiii, xcvi	

THE

MEDICAL AND CHIRURGICAL
Review.

AUGUST 1st, 1807.

ART. 14 *Philosophical Transactions of the Royal Society of London, for the Year 1807. Part I.* 4to, 132 pages. London, 1807. Nicol.

THE first article we shall notice (not the first in order), in the present collection, is a very interesting paper by Mr. Home, entitled, ‘*An Account of two Children born with Cataracts in their Eyes, to shew that their Sight was obscured in very different Degrees; with Experiments to determine the proportional Knowledge of Objects acquired by them immediately after the Cataracts were removed.*’

“ Mr. Cheselden’s observations on this subject, recorded in the *Philosophical Transactions* for the year 1728, pointed out two material facts; that vision alone gives no idea of the figure of objects, or their distance from the eye, since a very intelligent boy, thirteen years of age, upon recovering his sight was unable to distinguish the outline of any thing placed before him, and thought that every object touched his eye.

“ Mr. Ware’s cases, which have also a place in the *Philosophical Transactions* for 1801, and are com-

pared with that of Mr. Chefelden, appear to lead to a different conclusion. The following observations are laid before the Society with a view to explain this circumstance.

“*Case 1.* William Stiff, twelve years of age, was admitted into St. George’s Hospital under my care on the 17th of July, 1806, with cataracts in his eyes, which, according to the account of his mother, existed at the time of his birth. From earliest infancy he never stretched out his hand to catch at any thing, nor were his eyes directed to objects placed before him, but rolled about in a very unusual manner, although in other respects he was a lively child. The eyes were not examined till he was six months old, and at that time the cataracts were as distinct as when he was received into the hospital.

“Previous to an operation being performed, the following circumstances were ascertained respecting his vision. He could distinguish light from darkness, and the light of the sun from that of a fire or candle: he said it was redder, and more pleasant to look at, but lightning made a still stronger impression on his eyes. All these different lights he called red. The sun appeared to him the size of his hat. The candle flame was larger than his finger, and smaller than his arm. When he looked at the sun, he said it appeared to touch his eye. When a lighted candle was placed before him, both his eyes were directed towards it, and moved together. When it was at any nearer distance than twelve inches, he said it touched his eyes. When moved further off, he said it did not touch them; and at twenty-two inches it became invisible.

“On the 21st of July the operation of extracting the crystalline lens was performed on the left eye.

The capsule of the lens was so very strong as to require some force to penetrate it. When wounded, the contents, which were fluid, rushed out with great violence. Light became very distressing to his eye, and gave him pain. After allowing the eye-lids to remain closed for a few minutes, and then opening them, the pupil appeared clear, but he could not bear exposure to light. On my asking him what he had seen, he said, 'your head, which seemed to touch my eye:' but he could not tell its shape. He went to bed, and took an opiate draught: the pain in his eye lasted about an hour, after which he fell asleep. The whole of that day the light was distressing to his eye, so that he could not bear the least exposure to it.

"On the 22d the eye-lids were opened to examine the eye. The light was less offensive. He said he saw my head, which touched his eye. There was so much inflammation on the eye-ball, that a leech was applied to the temple, and the common means for removing inflammation were used.

"On the 23d the eye was less inflamed, and he could bear a weak light. The pupil was of an irregular figure, and the wounded cornea had not united with a smooth surface. He said he could see several gentlemen round him, but could not describe their figure. My face, while I was looking at his eye, he said was round and red.

"On the 25th the inflammation had subsided, but on the 27th returned, and continued notwithstanding different means were employed for its removal, till the 1st of August, when it was almost entirely gone. On the 4th the eye was apparently so well, that an attempt was made in the presence of Mr. Caven-
dish and Dr. Wollaston to ascertain its powers of vision; but it was so weak that it became necessary to shade the glare of light by hanging a white cloth

before the window. The least exertion fatigued the eye, and the cicatrix on the cornea, to which the iris had become attached, drew it down so as considerably to diminish the pupil. From these circumstances nothing could be satisfactorily made out respecting the boy's vision. On the 11th a second attempt was made in the presence of Mr. Cavendish, but the pupil continued so contracted and irregular, and the eye so imperfect in its powers, that it became necessary a second time to postpone any experiments.

“On the 16th of September the right eye was couched. This operation was preferred after what had happened to the other eye, in the hope that there would not be the same degree of inflammation; and as the former cataract was fluid, there was every reason to believe that couching would in this instance be most efficacious.

“The operation gave pain, and the light was so distressing to his eye that the lids were closed as soon as it was over, and he was put to bed. The consequent inflammation was not severe, but as soon as the fluid cataract which had been diffused through the aqueous humour was absorbed, the capsule of the lens was found to be opaque, and the sight consequently imperfect. The eyes were not examined with respect to their vision till the 13th of October, during which period the boy remained quiet in the hospital. On that day the upper part of the pupil of the left eye had in some measure recovered its natural state, and had become transparent, but the cicatrix in the cornea was more extensively opaque than before. The light now was not distressing to either eye, and when strong, he could readily discern a white, red, or yellow colour, particularly when bright and shining. The sun and other objects did not now seem to

touch his eyes as before ; they appeared to be at a short distance from him. The eye which had been couched had the most distinct vision of the two, but in both it was imperfect. The distance at which he saw best was five inches.

“ When the object was of a bright colour, and illuminated by a strong light, he could make out that it was flat and broad ; and when one corner of a square substance was pointed out to him, he saw it, and could find out the other, which was at the end of the same side, but could not do this under less favourable circumstances. When the four corners of a white card were pointed out, and he had examined them, he seemed to know them : but when the opposite surface of the same card, which was yellow, was placed before him, he could not tell whether it had corners or not, so that he had not acquired any correct knowledge of them, since he could not apply it to the next coloured surface, whose form was exactly the same with that, the outline of which the eye had just been taught to trace.

“ *Case 2.* John Salter, seven years of age, was admitted into St. George’s Hospital on the 1st of October, 1806, under my care, with cataracts in both eyes, which according to the accounts of his relations had existed from his birth.

“ After he was received into the hospital, the following circumstances were ascertained respecting his vision. The pupils contracted considerably when a lighted candle was placed before him, and dilated as soon as it was withdrawn. He was capable of distinguishing colours with tolerable accuracy, particularly the more bright and vivid ones.

“ On the 6th of October the left eye was couched. This operation was preferred to extraction, from a belief that the cataracts were not solid, and

as the injury done to the capsule by the operation would be less, there was not the same chance of inflammation, the disposition for which had been so strong in the former case. As the eye was not irritable, and was likely to be but little disturbed by this operation, every thing was previously got ready for ascertaining his knowledge of objects, as soon as the operation was over, should the circumstances prove favourable. The operation was attended with success, and gave very little pain. The eye was allowed ten minutes to recover itself: a round piece of card of a yellow colour, one inch in diameter, was then placed about six inches from it. He said immediately that it was yellow, and on being asked its shape, said, 'Let me touch it, and I will tell you.' Being told that he must not touch it, after looking for some time, he said it was round. A square blue card, nearly the same size, being put before him, he said it was blue and round. A triangular piece he also called round. The different colours of the objects placed before him he instantly decided on with great correctness, but had no idea of their form. He moved his eye to different distances, and seemed to see best at 6 or 7 inches. His focal distance has been since ascertained to be 7 inches. He was asked whether the object seemed to touch his eye, he said 'No;' but when desired to say at what distance it was, he could not tell. These experiments were made in the theatre of the hospital, in which the operation was performed, before the surgeons and all the students. He was highly delighted with the pleasure of seeing, and said it was 'so pretty,' even when no object was before him, only the light upon his eye. The eye was covered, and he was put to bed, and told to keep himself quiet, but upon the house-surgeon going to him half an hour afterwards, his eye

was found uncovered, and he was looking at his bed curtains, which were close drawn. The bandage was replaced, but so delighted was the boy with seeing, that he again immediately removed it. This circumstance distressed the house-surgeon, who had been directed to prevent him from looking at any thing till the next day, when the experiment was to be repeated. Finding that he could not enforce his instructions, he thought it most advisable to repeat the experiment about two hours after the operation. At first the boy called the different cards round; but upon being shewn a square, and asked if he could find any corners to it, he was very desirous of touching it. This being refused, he examined it for some time, and said at last that he had found a corner, and then readily counted the four corners of the square; and afterwards, when a triangle was shewn him, he counted the corners in the same way; but in doing so his eye went along the edge from corner to corner, naming them as he went along.

“ Next day, when I saw him, he told me he had seen ‘ the soldiers with their fifes and pretty things.’ The guards in the morning had marched past the hospital with their band; on hearing the music he had got out of bed, and gone to the window to look at them. Seeing the bright barrels of the muskets, he must in his mind have connected them with the sounds which he heard, and mistaken them for musical instruments. On examining the eye 24 hours after the operation, the pupil was found to be clear. A pair of scissors was shewn him, and he said it was a knife. On being told he was wrong, he could not make them out; but the moment he touched them he said they were scissors, and seemed delighted with the discovery. On being shewn a guinea at the distance of 15 inches from his eye,

he said it was a seven shilling piece; but placing it about 5 inches from his eye, he knew it to be a guinea; and made the same mistake as often as the experiment was repeated.

“From this time he was constantly improving himself by looking at, and examining with his hands, every thing within his reach, but he frequently forgot what he had learnt. On the 10th I saw him again, and I told him his eye was so well that he might go about as he pleased without leaving the room. He immediately went to the window, and called out, ‘What is that moving?’ I asked him what he thought it was? He said, ‘A dog drawing a wheelbarrow. There is one, two, three dogs drawing another. How very pretty!’ These proved to be carts and horses on the road, which he saw from a two pair of stairs window.

“On the 19th, the different coloured pieces of card were separately placed before his eye, and so little had he gained in thirteen days, that he could not without counting their corners one by one tell their shape. This he did with great facility, running his eye quickly along the outline, so that it was evident he was still learning, just as a child learns to read. He had got so far as to know the angles, when they were placed before him, and to count the number belonging to any one object.

“The reason of his making so slow a progress was, that these figures had never been subjected to examination by touch, and were unlike any thing he was accustomed to see.

“He had got so much the habit of assisting his eyes with his hands, that nothing but holding them could keep them from the object.

“On the 26th the experiments were again repeated on the couched eye, to ascertain the degree

of improvement which had been made. It was now found that the boy, on looking at any one of the cards in a good light, could tell the form nearly as readily as the colour.

“ From these two cases the following conclusions may be drawn:

“ That, where the eye before the cataract is removed, has only been capable of discerning light, without being able to distinguish colours, objects after its removal will seem to touch the eye, and there will be no knowledge of their outline; which confirms the observations made by Mr. Cheselden.

“ That where the eye has previously distinguished colours, there must also be an imperfect knowledge of distances, but not of outline, which however will afterwards be very soon acquired, as happened in Mr. Ware's cases. This is proved by the history of the first boy in the present Paper, who before the operation had no knowledge of colours or distances, but after it, when his eye had only arrived at the same state, that the second boy's was in before the operation, he had learnt that the objects were at a distance, and of different colours: that when a child has acquired a new sense, nothing but great pain or absolute coercion will prevent him from making use of it.

“ In a practical view, these cases confirm every thing that has been stated by Mr. Pott and Mr. Ware, in proof of cataracts in children being generally soft, and in favour of couching, as being the operation best adapted for removing them. They also lead us to a conclusion of no small importance, which has not before been adverted to; that when the cataract has assumed a fluid form, the capsule, which is naturally a thin transparent membrane, has to resist the pressure of this fluid, which like every other diseased accumulation is

liable to increase, and distend it, and therefore the capsule is rendered thicker and more opaque in its substance, like the coats of encysted tumours in general.

“As such a change is liable to take place, the earlier the operation is performed in all children, who have cataracts completely formed, the greater is their chance of having distinct vision after the operation. It is unnecessary to point out the advantages to be derived from its being done at a more early age, independent of those respecting the operation itself.”

Art. 4. “*Observations on the Structure of the different Cavities which constitute the Stomach of the Whale, compared with those of ruminating Animals, with a View to ascertain the Situation of the Digestive Organ:*” by the same.

“The following observations,” Mr. Home remarks, “are in some measure a continuation of those upon the stomachs of ruminating animals, contained in a former Paper. They are intended to shew that the stomach of the whale forms a link in the gradation towards the stomachs of truly carnivorous animals.

“This subject was brought under my consideration by the following circumstances. While at Worthing on the Sussex coast, in the month of August last, a *Delphinus Delphis* of Linnæus, or small bottle-nose whale of Mr. Hunter, was brought on shore by the fishermen alive. I immediately purchased it, with a view of enriching the Hunterian collection with the skeleton, and other parts of its structure.

“The stomach was the particular object of my own attention; for, having been so lately employed in considering the stomachs of ruminating animals, I was pleased with an opportunity of exa-

mining in a recent state the stomach of one of the whale tribe, to which the porpoise belongs, with a view to ascertain more accurately than had been hitherto done, the real resemblance between its structure and that of the stomachs of ruminating animals.

“ The structure of the stomach of one species of whale was not new to me, having twenty years ago assisted Mr. Hunter in dissecting the piked whale, but at that time I only viewed the different parts of its structure with the eye of a common observer, while now my mind was particularly directed to the peculiarities of the stomach. In this examination I discovered a resemblance between the second, third, and fourth cavities in the whale, and the two portions of the fourth cavity in the bullock and camel, which appears to throw some light upon the uses of those parts, as well as upon digestion in general.

“ As in the former Paper a particular description was given of the stomach of the bullock and camel, as examples of ruminants with and without horns, it will be proper here to describe the stomach of the bottle-nose porpoise, as an example of the whale tribe.

“ In the bottle-nose porpoise the œsophagus is very wide, has a number of longitudinal folds, and is lined with a strong white cuticle, which is continued over the internal surface of the first stomach.

“ The first stomach lies in the direction of the œsophagus, which is continued into it, there being no contraction to mark its origin. It is of an oval form, and bears a strong resemblance in shape to a Florence flask. The cavity is 15 inches in length, and 9 in diameter. The internal surface has a very corrugated appearance, and its cuticular covering is thick and strong. The coats of

the cavity are firm, and its bottom is surrounded by a strong muscular covering.

“The orifice which leads to the second stomach is at right angles to the cavity, and is situated a little way below the termination of the œsophagus. It is surrounded by several semicircular doublings of the internal membrane: the broadest of these is on the lower part; these are thick, and appear to be glandular.

“There is a canal between the first and second cavities 3 inches long, which opens into the second by a projecting orifice, and the cuticular covering of the first stomach terminates immediately beyond this orifice, which is $2\frac{1}{2}$ inches in diameter.

“This second stomach is nearly spherical, about 7 inches in diameter. Its internal surface has a honeycombed appearance, formed by soft ridges of a glandular structure, leaving interstices of some depth between them. This structure gives the coats a considerable degree of thickness.

“The opening into the third stomach is almost close to that which enters the second, and is only $\frac{4}{5}$ of an inch in diameter.

“The third cavity is nearly spherical, and is 2 inches in diameter. Its internal surface is smooth, and there are every where small orifices of ducts of glands opening into its cavity. The aperture which communicates between this and the fourth stomach is $\frac{3}{8}$ of an inch in diameter.

“The fourth cavity is nearly cylindrical like an intestine, but rather widest at its furthest extremity. It is $14\frac{1}{2}$ inches long; its greatest diameter is 3 inches. The internal membrane is smooth, and for 3 inches towards its origin and 4 inches towards its termination has numerous orifices through which secretions are poured into the cavity. The pylorus, which is the boundary of this stomach, is a round orifice $\frac{2}{3}$ of an inch in diameter.

“Immediately beyond the pylorus there is a dilatation of the gut, which both Cuvier and Hunter call a cavity belonging to the stomach. It must however be considered as duodenum, since the common duct of the liver and pancreas opens into it; the longitudinal *valvulae conniventes* have their origin in it; and there is no transverse constriction any where beyond it, to mark the beginning of an intestine. Such an enlargement of the duodenum is very common in other animals, and has been described in the account of the camel. The coats of this portion of the duodenum are thicker than those of the fourth stomach.

“The number of cavities constituting the stomach are not the same in all animals of the whale tribe. In the common porpoise, grampus, and piked whale, the number is the same as in the bottle-nose porpoise; but in the bottle-nose whale of Dale there are two more cavities. This variation is however by no means material, since the general structure of the stomach is the same.

“In all of the whale tribe there is one cavity lined with a cuticle, as in the bullock and camel.

“In all of them there is a second cavity made up of a very glandular structure. In the porpoise, grampus, and large bottle-nose whale, this structure resembles that which is above described. In the piked whale the rugæ are longitudinal and deep, but in some places united by cross bands; and as the piked whale has whalebone teeth, the great whalebone whale will probably, from the analogy of its teeth, resemble it in the structure of its stomach.

“The third cavity in all of them is very small, and bears a strong resemblance to the third cavity in the camel's stomach; its use, therefore, is probably the same.

“The fourth stomach in all of them has a

smooth internal surface, with the orifices of glands opening into its cavity. In the bottle-nose whale of Dale the two additional cavities have the same internal structure, and therefore must have the same general use, with a greater extension of surface, and the subdivisions will make the food pass more slowly into the intestine.

“The first stomach of the whale is not only a reservoir, but the food undergoes a considerable change in it. The flesh is entirely separated from the bones in this cavity, which proves that the secretion from the glandular part has a solvent power. This was found to be the case in the bottle-nose porpoise and large bottle-nose whale. In both of them several handfuls of bones were found in the first stomach without the smallest remains of the fish to which they belonged. The soft parts only can be conveyed into the second and third stomachs, the orifices being too small to admit the bones to pass.

“The bones must therefore be reduced to a jelly in the first stomach, and although the process, by which this is effected, being slower than that which separates the flesh, is the reason of their being found in such quantity in the cavity, the means by which it is performed are probably the same.

“The second cavity was supposed by Mr. Hunter to be the true digesting stomach, in which the food becomes chyle, and the use of the third and fourth he looked upon as not exactly ascertained*.

“Upon what ground Mr. Hunter was led to draw this conclusion cannot now be ascertained; and, such is my respect for his opinion, that nothing but the following observations, supported by facts, could lead me to form a different one. In considering this subject, it struck me that the second

* Vide Observations on the Structure and Economy of Whales. By John Hunter. Phil. Transf., vol. lxxvii, p. 411.

stomach could not be that, in which chyle is formed, since that process having been completed, any other cavities would be superfluous. The last cavity in all stomachs is that, in which the process must be brought to perfection; and therefore the most essential change, which the food undergoes, or that by which it is formed into chyle, should be performed in that cavity. Surveying the different cavities in the whale's and ruminating stomachs with this impression on my mind, and comparing them with the single stomachs of carnivorous animals, it appeared that the first point, which required to be ascertained was, which of the cavities in these more complex stomachs bears the greatest resemblance to the simple one. The fourth of the whale is certainly more like the human stomach than the second or third. I therefore concluded that the fourth, both from analogy and situation, is the stomach in which the process is completed: and that in this animal, from the peculiarities of its œconomy, and the nature of the food, not only a cuticular stomach is necessary, but also two glandular ones, in which it undergoes changes preparatory to its being converted into chyle.

“ Having satisfied myself upon this subject, and having compared the stomachs of the whale, with the fourth of the camel, the contraction or partial division of the camel's, made it apparent that the lower portion only of that cavity, which resembles in shape and internal appearance the human stomach, is the cavity in which chyle is formed, and the upper or plicated portion is only to prepare the food, and is therefore analogous to the second in the whale.

“ As the same appearances are met with in the fourth stomach of the bullock, as well as in the camel, although there is no permanent contraction

or division between them, the upper or plicated portion must be considered as a preparatory organ, and the lower portion as that, in which the formation of chyle is completed. This receives further confirmation from a more attentive examination of the parts, immediately after death, by which it was found that before the stomach has been disturbed there is an evident muscular contraction between the plicated and lower portion. This appearance was met with in every instance that was examined, and these were not fewer than nine or ten. Added to this the lower portion, on a more minute inspection, has an appearance somewhat similar to the inner membrane of the human stomach: and the surface of the plicæ is in many respects different.

“From the facts and observations which have been stated, it appears that in many animals of the class Mammalia, the food undergoes different changes preparatory to its being converted into chyle, and this last process is effected by a somewhat similar secretion, since the part of the stomach which produces it has in all of them an evident similarity of structure.

“The above facts appear to throw some light on the digestion of the different kinds of food, and open a wide field of enquiry into one of the most interesting parts of the animal œconomy which has been hitherto too much neglected. In the present very limited state of our knowledge there are many circumstances which cannot be accounted for: these, however, will be explained when a further progress has been made in this investigation.

“It is obvious, that as the stomachs of carnivorous animals are the most simple, animal substances, on which they feed, require a shorter process to con-

vert them into chyle than vegetables; but why the whale tribe, which live on fish, should have a more complex stomach, it is not easy to explain: since fish are very readily converted into chyle, in the stomachs of animals of their own class, as well as in the human stomach, and there is therefore reason to believe that they require as little preparation for that process, if not less than animal substances.

“ The fish bones swallowed by the whale tribe being retained in the cuticular bag, till they are reduced to jelly, explains the circumstance of cows and other ruminating animals being able occasionally to live on fish, (a fact, of which there is no doubt, both in the Orkneys and in Iceland,) since, if the bones are dissolved in the paunch, the other stomachs are in no danger of being injured from the animal living on this kind of food.

“ Whether these cavities, which I have called preparatory stomachs, are solely for purposes connected with digestion, or are also in any way connected with the formation of secretions peculiar to those animals, cannot be ascertained in the present state of our knowledge of digestion.

“ The oil of the physeter, which crystallizes into spermaceti, shews some affinity in this respect to the secretion of fat that becomes suet, which is only met with in ruminating animals: but on the other hand, the oil of the rest of the whale tribe does not form this substance, more than the fat of the horse produces tallow. These facts may be afterwards explained by an examination of the digestive organs of the physeter, when an anatomist shall have an opportunity of examining them.

“ These are enquiries which do not belong to the present Paper, as it is only intended to add some facts to those already laid before the Society,

and in a future communication I hope still further to increase their number."

ART. 15. *The Code of Health and Longevity ; or, a Concise View of the Principles calculated for the Preservation of Health, and the Attainment of Long Life ; being an Attempt to prove the Practicability of condensing, within a narrow Compass, the most material Information hitherto accumulated, regarding the different Arts and Sciences, or any particular Branch thereof.* By SIR JOHN SINCLAIR, Bart. 8vo, four volumes, price 2l 8s. Edinburgh, 1807. Murray, London.

FOUR closely-printed octavo volumes will hardly be deemed a *concise view* of the subject by the general reader, although they are really small in comparison with the numerous works that have been published on this branch of science. In truth, the bulk of the work, and the expence attending its purchase, are circumstances that will necessarily confine its perusal to a small number of readers ; yet it will be seen, when its nature and objects are explained, that the parts are in a great degree independent of one another, so that each singly might be consulted with advantage.

The idea of being able to preserve health, and prolong life beyond the ordinary term, is naturally grateful to the human mind ; and in fact every attempt to shew its practicability has always been favourably received by the public, however unreasonable and absurd the rules upon which it was founded. In the work before us, the worthy Baronet has, with uncommon diligence and industry, brought together a large mass of information, collected from an immense number of publications on the subject of health and longevity, as well as

from personal inquiries among friends and correspondents, both in this and in foreign countries; and he does not hesitate to express his conviction, that any person possessed of a plain, but sound, understanding, whose health is not yet materially injured, and who will carefully apply the facts and observations here collected to his own particular case, can hardly fail to add from 10 to 20, or even 30 years, to his comfortable existence.

The first volume may be considered, in a certain sense, original, since the materials, though borrowed chiefly from others, are digested and arranged according to the author's own plan. The other three volumes consist wholly of extracts, and in some instances of entire treatises, from the various writers who have published on the subject, together with such communications as have been purposely made to the author since his intention of publishing was made known. At present we shall confine our notice to the contents of the first volume.

In an introductory chapter the author gives a concise view of the structure of the human body, and shews the natural tendency of it to decay and to perish, from causes as well internal as external. We should not have stopped to notice truths so well known to every medical reader, were it not for the purpose of directing his attention to some interesting observations of Dr. Waterhouse of Cambridge, in New England, respecting the progress of the human frame to decay, which we believe to be original. "There are certain periods of life," Dr. Waterhouse remarks, "which are scarcely noticed by medical writers, viz.: about the age of thirty-six, when the lean man becomes fatter, and the fat man leaner. Another between the

years of forty-three or forty-four, and fifty, when his appetite fails, his complexion fades, and when his tongue is apt to be furred on the least exertion of body or mind. At this period his muscles become flabby, his joints weak, his spirits droop, and his sleep is imperfect and unrefreshing. After suffering under these complaints a year, or perhaps two, he starts afresh with renewed vigour, and goes on to sixty-one or sixty-two, when a similar change takes place, but with aggravated symptoms. During the natural change that takes place between forty-three and fifty, no particular organ suffers, but a gradual and uniform *deterioration* supervenes. At this time he first experiences a reluctance to stoop; he prefers a carriage to riding on horseback, and he finds himself more affected by changes of the weather. He nevertheless commonly passes through this kind of "*moulting*," and regains his health, with a little diminution of muscular strength, until he turns *sixty*: then the gravity of age is more strongly marked, and he begins to boast of his age and its prerogatives. This is the result of my observation on others compared with my own personal experience, which goes no further than your own [the author's], being born in the same year, viz. 1754."

The volume is divided into three parts. *Part I* treats 'of the circumstances which necessarily tend to promote health and longevity, independent of individual attention, and the observance of particular rules.'

It will hardly be disputed, that while individuals differ so much from each other with regard to a variety of important particulars, as climate, original formation, &c. there must be necessarily a material difference with respect to their health, and

the duration of their lives. To ascertain what these particulars are, and their effects, is the object of this part of the work. They may all, the author thinks, be comprehended under the following general heads.

1. Circumstances connected with the person of the individual, as, parentage; perfect birth; gradual growth; natural constitution; form; sex; and *where nature makes an effort to renew the distinctions of youth.*

2. Circumstances connected with the mind of the individual, in regard to its faculties and passions.

3. Circumstances connected with his residence; as, climate, situation, &c. &c.

4. Adventitious circumstances, as rank in life; education; occupation; connubial connexion; and exemption from accidents.

On such a variety of topics, it is impossible for us even to touch; we shall therefore merely make an extract here and there of such matters as appear most likely to interest the reader: such, in particular, are the observations regarding the renovation of the distinctions of youth, which we marked in *Italics* above.

“ Among the various circumstances which distinguish youth from old age, three of the most remarkable are, the colour of the hair, the possession of teeth, and the clearness of vision. It is singular, that many instances are to be met with, where, after old people have experienced a failing with respect to these particulars, nature has in a manner made a fresh effort to renew the distinctions of youth.

“ We shall proceed to give instances where a renovation has taken place in regard to each.

“ *The Hair*.—The colour of the hair varies much in different men, during their youth; but when they get old, it almost uniformly becomes first grey, and afterwards white. This does not happen at the same age in every case; for some are grey as early as twenty, or twenty-five, while others have only a few grey hairs at fifty, or even sixty years of age.

“ It can hardly be doubted, that dryness, or want of moisture, is a principal cause of grey hairs, and, consequently, that the custom of wearing hair-powder must bring them on sooner than otherwise would be the case. There is reason, therefore, to believe, that keeping the roots of the hair well moistened with oily or fat substances, is the best means of keeping back what so many are inclined to consider as a defect, but which, at the same time, is not consistent with the possession of good health, or the attainment of longevity.

“ But the singular circumstance is this, that after an individual has got grey hairs, he suddenly or accidentally loses them; and, in their stead, hair of a different colour makes its appearance. Of this the following examples may be cited:—

“ It is recorded in the Transactions of the Royal Society*, on the evidence of Dr. Slare, that his grandfather, whose hair, about the eightieth year of his age, had become white, grew much darker afterwards.

“ It is also reported of one Mazarella, who died at Vienna, in the 105th year of his age, that

* Vol. xxviii.

a few months before his death, he had not only several new teeth, but that his hair, grown grey by age, became black, its original colour*.

“ A similar circumstance is mentioned of Susan Edmonds, of Winterbourn, Hants, who died at the age of 104, and who, five years before her death, had new hair, of a fine brown colour, which begun to turn grey a few months before her death†.

“ It is also said, that John Weeks, of New London, in Connecticut, who died at the age of 114 years, lost his grey hairs, which were renewed by hair of a dark colour‡.

“ *The Teeth.*—There is no particular, in respect of which former generations seem to have enjoyed a greater superiority over the present, than with regard to the duration of their teeth. A place of interment was lately opened at Scone, near Perth, in Scotland, which had remained untouched for above 200 years, and yet, to the astonishment of every one, among a great number of skeletons, which were there discovered, there was hardly any of them whose teeth were not entire and sound§. This must be ascribed to greater simplicity of diet; to the teeth being less injured by fumes from a disordered stomach; to the custom of drinking hot liquors being then unusual; and perhaps to the absence of scorbutic complaints.

“ The means of preserving the teeth will be the subject of future discussion. On the present occasion it is only necessary to observe, that many examples may be quoted, where persons, having

* *Easton on Human Longevity*, p. 147.

† *Ibid*, p. 168. ‡ *Ibid*, p. 286.

“ § This curious circumstance has been certified to me in a letter from the Rev. Mr. Aitken, minister of Scone, near Perth.”

lost their teeth a second time, have got a third set of teeth, in some cases partly, in others wholly, supplying the places of those they have lost. This circumstance merits to be particularly attended to, for, as Bacon has well observed, new teeth put forth in our older years, betoken long life.

“ One of the first instances of this circumstance at all authentically recorded, is the case of the old Countess of Desmond, which was accounted to be so remarkable, that many considered it to be a fable. Lord Bacon himself seems to consider it as doubtful. He says, ‘ *They tell a tale* of the old Countess of Desmond, that she did twice or thrice cast her old teeth, and that others came in their room.’ But the fact is sufficiently authenticated for one of such great antiquity, and is corroborated by many other instances.

“ In the Philosophical Transactions, vol. xxviii, it is affirmed by Dr. Slare, that his grandfather, who was a native of Bedfordshire, had all his teeth strong and firm at the age of 80, and that, within five years afterwards, he had a new set. He adds, that he remained in good health and strength to the 100th year of his age, and even then died in consequence of fulness of blood. These singular events, the doctor attributes to the frequent use of sugar, of which his relation was a great eater.

“ It is singular that the teeth should, in this particular instance, be preserved so long, notwithstanding the use of sugar, since the ruin of the teeth is so often attributed to that article*.

“ In the Philosophical Transactions also, two other instances are mentioned, one of Joseph Shute, a clergyman, who got a new tooth when he was 81

* The Negroes have fine teeth, though they use much sugar.

years of age ; and another, Maria Hart, who got two new teeth at 75 years of age*.

“ In the return I have received of the old people from Greenwich Hospital, mention is made of one (John Moore, a native of Ireland, the oldest man in the house,) who said, that he had four new fore-teeth within five years preceding the return, one of which he had accidentally lost†.

“ I myself have seen one James Donald, an old man now living, who had got new teeth, which I had an opportunity personally of examining. They appeared to be of a much softer consistence than teeth usually are, and not fit to do the same service ; and, on the whole, they can only be considered as an imperfect substitute.

“ It is said by anatomists, that the foundation of three sets of teeth may frequently be traced in the jaw of man. But, if that is often the case, it is surprising that instances are not more frequent of such teeth being obtained.

“ *The Sight.*—There is also reason to believe, that after the sight has been lost, seemingly by a decay of nature, it has again returned, not perhaps in its former perfection, but so as to be of great use.

“ One of the most singular instances of the sight being renewed, is in the case of Machell Vivan, a native of Scotland, but who was settled as a clergyman in Northumberland, and lived beyond 110 years of age. A particular account of him is given by a person entitled to credit, who saw him per-

* In Easton on Longevity, there are many instances quoted of a renewal of teeth, as that of Philip Laroque, p. 104 ; Marion Gibson, p. 225, &c. &c. There is also a remarkable instance of one in Hufeland, vol. i, p. 171.

† Lowthorp's Abridgement, vol. iii, p. 297.

sonally in the year 1657, and who declares, that his hair had become like a child's, rather flaxen; that he had three new teeth, which he, however, got with difficulty; and though, about forty years preceding that period, he could not read the largest print without spectacles, yet, that his sight was renewed, so that no print or writing was so small that he could not read it without them. He had five children after he was eighty years of age*.

“ I am assured, from respectable authority, that the following circumstance may also be depended upon. A lady, in the county of Fife, North Britain, who died at the age of 89, after having been under the necessity of using spectacles for several years, recovered her sight, so that for some time before she died, she could read very small print, and sew linen without glasses.

“ Dr. Rush also mentions an old man, (Adam Riddle, of Pennsylvania,) who, about the 68th year of his age, gradually lost his sight, and continued entirely blind for the space of twelve years, at the end of which period his sight returned, without making use of any means for the purpose, and without any visible change in the appearance of the eyes. It is singular, that, after recovering his sight, he saw as well as ever he did. During both the gradual loss and recovery of his sight he was no ways affected by sickness, but, on the contrary, enjoyed his usual health†.

“ Several other instances of a similar nature might be quoted‡, but these are sufficient to esta-

* See Fuller's *Worthies of England*, fol. edit. 1662, county of Northumberland, p. 309.

† “ *Medical Inquiries and Observations*, by Benjamin Rush, M. D. printed at Philadelphia, anno 1793, p. 312.”

‡ “ See *Easton on Longevity*, account of Thomas Edgar, p. 195; and Janet Allan, p. 215. An intelligent physician informs me, that

blish the general principle, that aged people may have this distinction of youth renewed.

“ It is singular, that no particular instance has occurred of the sense of hearing being renewed, after being lost by a decay of nature, or the effects of old age. It is to be observed, however, that the human race are not so apt to lose their hearing as their sight. In the return from Greenwich Hospital of 96 old men beyond 80, the organ of vision was impaired in about one half, whereas the organ of hearing only to the extent of about a fifth. But this circumstance can easily be accounted for, as the eye is certainly a more delicate organ than the ear, and more liable to a variety of accidents.”

It appears from observation that the possession of genius or uncommon talents in the individual, is unfavourable to longevity; for, among the long list of persons who, since the commencement of the Christian æra, have lived about a century, there is but one individual (Fontenelle) at all distinguished for his intellectual powers, (and he did not reach quite a hundred years); whilst there are above one thousand seven hundred others remarkable for little else than the duration of their lives, and the number of years they witnessed. On the other hand, it might be remarked, though it seems to have escaped the author's notice, that imbecility of mind, or defective understanding, is equally unfavourable to long life. This perhaps is because

he knew an old lady of above 70, who had used spectacles at 50, and about 70 could sew fine work without them. She had cartilaginous substances on the gums, which appeared to her as new teeth. When these changes took place, she had a regular monthly discharge of blood from an issue somewhere about the knee. She was so *renovated* as to walk miles.”

such a state is in general the effect of corporeal derangement or imperfection.

In regard to climate, it appears that hot ones are adverse to long life, though in many respects favourable to health, particularly during infancy. When *Kien Long*, Emperor of China, the greater part of which may be denominated hot, in the year 1784, ordered all the old men in his extensive dominions to be collected, only four could be discovered who exceeded a hundred years of age, out of a population that has been rated at two hundred millions. Norway, a cold climate, has been the most celebrated for furnishing instances of longevity. It is said, that in the diocese of Aggherus, in Norway, there were reckoned at one time, (anno 1763,) one hundred and fifty couples, who had lived together upwards of eighty years; consequently, the greater number, if not the whole of these three hundred individuals, were upwards of one hundred years of age, and some of them much older*.

Part 2 contains 'Rules for the Preservation of Health, and the Attainment of Longevity.' If men lived uniformly in a healthy climate; were possessed of strong and vigorous frames; were descended from healthy parents; educated in a hardy and active manner; and were engaged only in healthy occupations, and the like, there would be little occasion, the author observes, for medical rules. But some individuals enjoy none of these advantages, whilst hardly any possess them in a complete manner. Hence arises the necessity of attending to those rules which observation and experience have pointed out, as being most likely to

* *Easton on Longevity*, p. 74.

counteract the disadvantages arising from so material a want, as of any of the natural or incidental advantages above enumerated.

The rules here inculcated relate to what have been absurdly termed the *non-naturals*; to habitation, amusements, medicine, bathing, and a variety of other circumstances, which will readily suggest themselves to the mind of the professional reader, as having a powerful influence on the functions of the animal economy.

Part 3 contains 'Regulations for the Health of the Community at large.' It is in vain, the author observes, that either nature has formed an individual for long life, or that he observes all those rules which are necessary for the preservation of health, if attention be not paid by the government of a country to the happiness and safety of its subjects. This is a point that has seldom indeed been attended to in the manner which its importance deserves. While the attention of lawgivers is unceasingly directed to a variety of less important objects, those regulations, on which the safety of the people at large depend, are unfortunately neglected. Countries or districts are suffered to continue noxious to the health of their inhabitants, merely for want of drainage, cultivation, and improvement; unwholesome provision and other articles to be sold, without punishing those who thus attempt to injure the health, and perhaps to destroy the existence, of their fellow creatures: public amusements of a pernicious nature are permitted; public institutions suffered to become the seminaries of disease; the sale of noxious drugs and medicines sanctioned and even encouraged by law, for the purposes of revenue; and

the admission of contagious diseases imperfectly guarded against. These circumstances justly demand the establishment of a *Police of Public Health*, the views of which should be directed to climate, physical education, diet, public amusements, habits and customs, public institutions, the health of sailors and soldiers, contagious disorders; and lastly, medicine, and the means of improving it, an object which government has more than neglected,—it has even sanctioned its abuses.

Such is the outline of the author's plan, the extent of which is only equalled by its importance. That it has been completely executed, would be too much to say; indeed, no individual is competent to such a task. To perform it adequately would require a perfect acquaintance with the human body, its several functions, and the relations it stands in to the external world, as well as those which subsist among its individual parts. The want of this knowledge in the author is in many instances but too apparent; hence the indiscriminate admission of truth and error, and a want of *selection*, which if adopted would very materially have diminished the bulk of the work, while it added to its real value. As a single instance of credulity on the part of the author, may be mentioned his quotation from Adair, of a case of *somnambulism*, in which the person, a young ecclesiastic, in his sleep, with his eyes shut, is said not only to have written sermons, but to have corrected them by interlineation!

A number of physiological blunders might be pointed out, arising from the cause mentioned, and which shew that the education and pursuits of the author have not been such as to qualify

him altogether for the task he has undertaken. Thus, speaking of the cure of many disorders by external means, this circumstance, he says, *can only arise from absorption*. Again, dryness, or want of moisture, it is said, is a principal cause of grey hairs; and, consequently, that the custom of wearing hair powder must bring them on sooner than would otherwise be the case:—the fact and the explanation here are probably equally unfounded.

In our next we shall notice the contents of the three remaining volumes.

ART. 16. *An Inquiry into the Functions of the Spleen, Liver, Pancreas, and Thyroid Gland.*
By BENJAMIN RUSH, M.D. Philadelphia, 1805.

THE learned author of this pamphlet entertains opinions in a great measure new, respecting the uses of the organs above specified.

With regard to the spleen, four uses, Dr. Rush observes, have been ascribed to it. It has been said (1) to prepare the blood for the secretion of bile by the liver—(2) to be the organ in which the red globules of the blood are formed—(3) to be a counterpoise to the weight of the liver on the left side—and (4) to afford an occasional supply of blood to the vessels of the stomach which secrete the gastric liquor, when that viscus is unduly distended with food. Without stopping to discuss the truth or probability of these several opinions, the professor proceeds to state his own theory on the subject, and which is as follows:

“ All the motions which go forward in the hu-

man body are produced by external and internal stimuli. These stimuli exert their influence directly or indirectly upon the blood-vessels. From innumerable causes they are liable to become *excessive* in their force. Such is the excess of this force, and such the frequency of its occurrence from exercise, labour, intemperance, passions of the mind, and disease, that a provision to defend the tender and vital parts of the body from the effects of this force, seems to be a necessary appendage to the body. This provision I believe to be the Spleen." The opinion is afterwards unfolded by the author still further, by supposing this viscus to serve the blood-vessels as an occasional reservoir of their redundant motions and quantity of blood; by considering it as made up chiefly of a texture, calculated promptly and freely to afford a receptacle for the blood, when excited into tumultuous motions; and by styling it the *waste-gate* for the torrent of blood excited into action by violent and excessive agitation of the blood-vessels.

"How far the spleen may act by absorbing and suffocating undue impressions upon the nervous system and the mind, I know not; but I think it probable it serves this important use in the animal economy.

"*Of the Function of the Liver.*—The design of the liver I believe to be, to receive the blood from every part of the body, in order to subject that part of it which had not been completely animalized, or divested of its chylous properties, to a secretory process, and afterwards to pour the product of this secretion, mixed with the liquor of the pancreas, into the duodenum, to be absorbed or otherwise taken up by the lacteals, and conveyed with the chyle from the stomach into the blood-vessels, in order to be completely converted into

red blood, for the purpose of serving the various and important uses for which that fluid is intended in the human body.

“ *Of the Functions of the Pancreas.*—The pancreas resembles the salivary glands in its structure; it secretes a liquor which possesses the same dissolving and animalizing properties as the saliva, and it pours this liquor so directly upon the hepatic bile in the common duct, before it enters the duodenum, as to act upon it in a concentrated state, and thereby to change it into perfect chyle. By ascribing this use to the pancreas, we rescue it from its insignificant office of performing a work of supererogation only to the saliva and gastric juice, and give it a little sovereignty or independent jurisdiction in the animal economy.

“ *Of the Use of the Gall-bladder and the Cystic Bile.*—From the situation of the gall-bladder, from the acute angle its duct makes with the hepatic duct, where they form the ductus communis, and from the circumstances which influence its fulness and depletion, I believe it to be intended wholly to serve the same purpose with respect to the liver, which the spleen serves to the whole sanguiferous system, that is, to afford a receptacle for redundant bile, and thereby to prevent the obstruction of the hepatic bile into the duodenum, and its regurgitation into the pori biliarii.

“ *Of the Functions of the Thyroid Gland.*—The design of this gland I believe to be, to defend the brain from the morbid effects of all those causes which determine the blood into it with unusual force.”

New York; established in 1801. By DAVID HOSACK, M.D., Professor of Botany and Materia Medica in Columbia College, and Fellow of the Linnæan Society of London. New York, 1806.

WE notice this pamphlet as a proof of the advancement of our Transatlantic brethren in the useful sciences, but principally as it affords an honourable testimony to the philosophical spirit and liberality of an individual, who, with means that œconomy could scarcely warrant such an application of, has been able, at his own proper cost, to form an establishment that the public have a much greater concern in than the individual, and which ought to have been instituted at the public expence, the moment a professorship of botany was determined upon, or even thought necessary. We shall give the learned author an opportunity to explain his motives and conduct, by quoting his preliminary observations.

“ The establishment of a botanic garden in the United States, as a repository of native plants, and as subservient to medicine, agriculture, and the arts, is doubtless an object of great importance.

“ Impressed with the advantages to be derived from an institution of this nature, I have anxiously endeavoured, ever since my appointment to the Professorship of Botany, to accomplish its establishment.

“ Sensible that a work of such magnitude could with difficulty be effected by an individual, I have frequently applied to the Legislature of the State, soliciting their assistance in this expensive and arduous undertaking; but hitherto these applications have proved unsuccessful. Thus disappointed of

that public aid and encouragement which such a plan peculiarly demanded, I resolved to devote my own private funds to the prosecution of this object, trusting that when the nature of the institution should be better and more generally known, and its utility fully ascertained, it would receive the patronage and support of the public.

“ In the year 1801 I purchased, of the Corporation of the City of New York, twenty acres of ground; the greater part of which is now in cultivation. Since that time a conservatory, for the more hardy green-house plants, has been built; in addition to which two hot-houses are now erecting for the preservation of those plants which require a greater degree of heat.

“ The grounds will be arranged in a manner the best adapted to the different kinds of plants, and the whole enclosed by a belt of forest trees and shrubs, native and exotic.

“ A primary object of attention in this establishment will be to collect and cultivate the native plants of this country, especially such as possess medicinal properties, or are otherwise useful.

“ Although much has been done by the governments of Great Britain, France, Spain, Sweden, and Germany, in the investigation of the vegetable productions of America; although much has been accomplished by the labours of Catesby, Kalm, Wangenheim, Schoepf, Walter, and the Michaux; and by our countrymen, Clayton, Bartram, Colden, Muhlenberg, Marshall, Cutler, and Barton; much yet remains to be done in this western continent. The numerous articles of medicine which this country has already furnished; the variety of soils and climates which it comprehends, encourage the belief that more remain to be discovered, and that the *Materia Medica* may

still be enriched by the addition of many indigenous plants, whose virtues are yet unnoticed or unknown.

“ It is also my intention to introduce, from different parts of the world, such plants as are most useful in agriculture, in medicine, and the arts, and to ascertain which of them are capable of being naturalized to our soil and climate. There is no doubt that our agriculture may be much improved by the introduction of many foreign grasses and other plants cultivated as food for cattle; and many valuable additions may be made to our tables, by the importation of the best fruits and vegetables of foreign countries.

“ Another object of importance is, to afford to students of medicine the means of acquiring a knowledge of the natural history of plants, and the principles of botanic arrangement, a science intimately connected with their profession, as it not only enables them to distinguish one plant from another, but frequently leads to an acquaintance with their qualities and uses. For this purpose the grounds will be divided into different compartments, calculated to exhibit the various plants according to their several properties; and these again will be arranged so as to afford a practical illustration of the systems of botany at present most esteemed, the sexual system of *Linnaeus*, and the natural orders of *Jussieu*.

“ Hitherto the botanic gardens of *Edinburgh, Oxford, Cambridge, London, Paris, Copenhagen, Leyden, Upsal, Goettingen, &c.* have instructed the American youth in this essential branch of medical education; and it is, in some degree, owing to those establishments that the Universities and Colleges of those places have become so celebrated,

and are resorted to by students of medicine from all parts of the world.

“ A botanic garden, therefore, while it proves useful to society, and contributes to the improvement of science, cannot fail to enhance the reputation of the Medical School of New York. This and similar considerations, it is to be presumed, will induce the Legislature of the State, at a future day, to extend its patronage and protection to an institution the first of its kind that has been attempted in the United States*.

“ Before I conclude these prefatory remarks, I must acknowledge the obligations I am under to many gentlemen who have already befriended this establishment, especially to my much esteemed instructor and friend Dr. James Edward Smith, the President of the Linnæan Society of London; to Professor Vahl, and Mr. Hoffman Bang, of Copenhagen; to Professors Desfontains and Thouin, of the Botanic Garden of Paris; to Mr. Alderman Hibbert and Dr. Lettsom of London; Mr. Salisbury, proprietor of the Botanic Garden at Brompton; Dr. Fabroni, Director of the Royal Museum at Florence; and Mr. Andrew Michaux, author of the *Flora Boreali Americana*, &c. &c. From those gentlemen I have received many valuable plants, seeds, and botanical works, accompanied

“ * I learn with pleasure, that a Botanic Garden is proposed to be established near Boston, and connected with the University of Cambridge. The Legislature of Massachusetts, with a munificence which does them honour, have granted, for this purpose, a tract of land, the value of which is estimated at thirty thousand dollars, and several individuals have evinced their liberality and love of science, by voluntary subscriptions, to the amount of fifteen thousand dollars, towards the establishment and support of that institution. Another is also begun at Charleston (South Carolina), and a third is contemplated in New Jersey, in connection with the College of Princeton.

with the most polite offers of their further contributions to this institution.

“ Nor must I be unmindful of the obligations I am under to several gentlemen in this country, distinguished for their taste and talents in this department of science.

“ From John Stevens, Esq. of Hoboken, I have received many of the most valuable exotics in my collection. To Baron de Carandeffez I am also indebted for a large collection of seeds of tropical plants.

“ Our late Minister in France, the Honourable Robert R. Livingston, has also largely contributed to my collection during his residence in Europe.”

The zeal and industry of the author are evident in the extent of his collection, which, in the short period since its establishment, amounts to little short of 2000 different plants.

ART. 18. *An Inquiry into the Seat and Nature of Fever, as deducible from the Phenomena, Causes, and Consequences of the Disease, the Effects of Remedies, and the Appearances on Dissection.* By HENRY CLUTTERBUCK, M.D. Member of the Royal College of Physicians, London. Part I.

[Continued from page 49.]

WITH unabated satisfaction, we proceed in the duty of composing an abridged account of this interesting performance.

Of the supposed mode of agency of the causes of fever on the brain. It is conceived to be most

probable that these occasional causes operate upon the brain, altho' applied to remote parts (independently of absorption or being taken into the mass of blood), namely, through the medium of the mouth, nostrils, lungs, stomach, or skin, with which they happen to come in contact. It is remarked that absorption does not explain the difference between the inoculated and casual small-pox. *Quantity* of contagious matter does not influence the effect; yet it is not denied that absorption may take place.

On the fact of the alternation of fever with inflammation, it is observed, that as one inflammation is frequently removed by another, so fever and inflammation in many cases prove reciprocally a remedy for each other: thus in erysipelas and other external inflammations, *metastasis*, as it is called, not unfrequently takes place to the brain, and idiopathic fever ensues; and, on the other hand, fever is sometimes terminated critically, in consequence of inflammation arising in some external part of the body. From the cure of both fever and inflammation by critical discharges, an inference is drawn of the similarity in the nature of the two affections.

The analogy between fever and inflammation is next shewn, in the cure of the two affections; both in the natural way, as it is called, and artificially. Bloodletting, purging, sweating, and blistering, are the principal remedies that have been employed in both. If stimulating remedies have sometimes cured inflammation, the same effect is shewn to have been produced by them in fever. Cold applications have often cured both.

The circumstances of *predisposition* are in many respects alike, both with regard to fever and inflammation.

On the subject of the *Diagnosis*, as the author's notion of fever is so different from the general one, this branch of the Inquiry will require explanation. The diagnostics are to be searched for, the author says, not exclusively in the vascular system and temperature of the body, but in the functions of the sensorium conjointly with symptoms of inflammation, the presence of which last is denoted by the irritated action of the heart and arteries, with increased evolution of heat. Technically this state is called *symptomatic fever*, and is in reality as truly secondary or *symptomatic* in proper fever, as it is in other inflammations.

The sensorial functions of sensation, voluntary power, and intellect, are distinctly affected in fever, either by diminution of energy, or in the opposite way. Pain in the head is an essential character of the disease, and has not, the author thinks, been duly noticed.

The degree and danger of fever are in the ratio of the derangement of the sensorial functions. All the symptoms originate in the part which is the seat of the disease, viz. the brain. Fever, therefore, in the author's opinion, should no longer be classed among the universal diseases, but be ranked among the topical inflammations, or *phlegmasiæ*.

In the due line of method, the able writer proceeds next to treat of the cure of fever in a general way, as deducible from the pathology. The varieties are to be treated of hereafter. It is with great modesty proposed, that the only improvement in practice to be expected, is from the esta-

blishment of a just theory, by which superfluous and frequently hurtful remedies may be avoided, and a more precise and efficacious use be made of those already in our hands. The present doctrine, says the author, is not at variance with any established mode of cure of acknowledged utility. Hitherto, hypothesis has vitiated practice, as appears by the influence of the doctrines of *obstruction*, *acidity*, *alkalescency*, *heat*, *spasm*, and *debility*.

The treatment of fever in most general use at present is rather palliative than radical, and the general scope of it not very different from the plan of Hippocrates. But if the pathology now offered be well founded, namely, that fever consists in inflammation of the brain, the influence in practice may be of great importance. The endless varieties of fever must render it hopeless to lay down one rule for all cases. If the theory be true, the remedies, from the analogy of other inflammations, ought to be chiefly blood-letting, purging, sweating, &c. cold drinks and applications, external stimulation &c. In the ensuing section is shewn to what extent the doctrine accords with the practice, as confirmed by experience.

Of blood-letting.—The discussion of this remedy appears to have called forth the author's utmost exertion of thought, and occupied him in reading an extensive series of writers on the subject. Sixty pages are filled on this topic; with matter, however, so important, that not one could be omitted without sustaining a loss much to be regretted.

If fever consist in inflammation of the brain, it might be expected, perhaps, that blood-letting must be the sole or principal remedy in all cases: as such practice, however, is at variance with experience, an explanation becomes necessary.

The author observes, that by inflammation of the brain he does not mean merely that violent kind which takes place in phrenzy, but it may be in a much less degree, as in circumscribed cases of inflammation, or as in erysipelas, or phlegmon, and other modes of inflammation, in which blood-letting is not always useful, but sometimes hurtful.

Besides, experience shews that certain inflammations are best cured, not by weakening, but by stimulating and strengthening remedies: also, that the same kind of inflammation has been sometimes cured by each of these different means. Inflammation occurs as readily, generally, in weak as in strong habits; indeed more frequently in the former than in the latter.

The rule is not constant, that blood-letting is improper for inflammation in debilitated habits, although it is ascertained that in certain cases the cure may be rendered more difficult by weakening measures carried to a great extent. Blood-letting may even be serviceable in aid of tonics and stimulants. Two ounces of blood will often reduce the strength sufficiently, and more will do harm. In truth, any considerable impression may prove a remedy for fever; and hence very opposite means have proved such. Even diseases of apparent debility have been cured by evacuations, and diseases of the reverse kind have been cured by stimulants. Sydenham used blood-letting in cases where Morton employed stimulants; yet both succeeded.

In all inflammations there is increased action, but in different degrees; hence the distinction into *active* and *passive* is ill founded. Stimuli seem to induce fatigue in the part inflamed, and thus reduce the exertions to the standard of health, as in

burns and scalds treated by stimulants, even by heat itself, although cold also succeeds.

Because blood-letting is often hurtful, it by no means follows that fever does not consist in inflammation of the brain. In fact, however, this remedy has in all times been much employed in the cure of fevers; and, perhaps, its disuse at present is partly imputable to the fashion of a system. A large mass of most respectable authorities is collected in favour of blood-letting in fevers. Huxham directs blood-letting, even in fevers attended with depression and weakness, as in malignant and pestilential fever, in the early stages, when, he observes, the blood is often buffy. If this remedy has occasionally done harm, so has wine and opium. Schenckius declared that all who took wine in a pestilential fever were destroyed by it.

The increased vascular action in fever probably depends upon the cerebellum being affected, this having a more direct influence on the heart than the cerebrum, which is more devoted to the organs of sense and the voluntary muscles. The great and immediate relief experienced in many cases from copious blood-letting appears to the author only to be accounted for upon the supposition of the disease having its foundation in the most active topical inflammation. In the milder form of fever, neither pain nor vascular exertion urge the use of the lancet, and the employment of it in such cases would incur the charge of rashness; but it should be recollected, that those who condemn the practice have not experienced the effects of it, and therefore are scarcely competent to decide. The notion that debility is the essential part of fever, does not allow of blood-letting; but if inflammation be the cause, there will be no reasonable ob-

108 Clutterbuck *on the Seat and Nature of Fever*. Part I
jection. This matter, however, is left to experience.

It is an error to suppose that blood-letting should not be used at all, because more than six ounces are found to do harm ; for the benefit may depend upon nicely adjusting the quantity to the state of the constitution. Topical bleeding, too, may be fitting, when general is not. Probably some advantage may be gained by the ancient practice of bleeding in the jugular vein ; but in the temporal artery it is objectionable, from the necessary ligature, and the slow discharge. Reason is on the side of blood-letting, if inflammation of the brain be the disease of fever : it relieves the great center of sensation and motion, early used. Hence we see why the young and vigorous suffer more from fever than the very young or very old.

Of vomiting.—Like *blood-letting*, the efficacy of *emetics* depends upon their early administration, either in immediately curing or in mitigating the disorder. Theory suggests, what experience confirms, that blood-letting should be employed previously in certain cases, there being some hazard to the brain from vomiting. Nausea moderates febrile movements. The efficacy of emetics is explicable, on account of the sympathy between the brain and the stomach ; hence nausea depresses the energy of the brain, and with it that of the whole vascular system. Let the brain be injured, and sickness and vomiting immediately supervene.

Of purging.—This is the most effectual remedy next to blood-letting. In affections of not only the brain, but of the head externally, eyes, and throat, has this class been celebrated. The principle which has in a great measure banished blood-

letting from modern practice, has also purging ; yet there is good evidence of its efficacy, even in the *typhus mitior*, and in remittents. Among other testimony is that of Dr. James Sims, who set forth the advantages of purging most ably, above thirty years ago ; and at that time the doctrine produced a great sensation, as much so as the able work of Dr. Hamilton recently published.

In infants, probably, the disorder of the *primæ viæ* often brings on brain-affections, and as frequently are the former produced by the latter. Dr. Fordyce, however, testified against the use of purgatives in fever, as tending to produce relapses, and rarely doing any service.

Of sudorifics.—These have been of equal use in fevers and inflammations, especially after blood-letting. When there is great vascular action, sudorifics cannot be employed with safety till blood-letting has been instituted ; but in contrary circumstances, exciting sweating is proper, and bleeding hurtful. Sudorifics have been less used in modern than in former times ; apparently, not that they are less useful, but that they were employed on a principle no longer allowed,—*concoction* and *depuration*. The mode of exciting this evacuation makes a great difference in the effects ; if by stimulating internal medicines, much harm may be produced in many cases ; but the warm bath or vapour bath may be used with more safety to excite sweating.

The succession or conjunction of remedies is of consequence by assisting each other : so purging after blood-letting is the most powerful means of quelling a fever.

Of epispastics.—Spontaneous inflammation in

many instances having cured fevers, it was obvious to imagine, that exciting it purposely might be followed by equally good effects. The *rationale* of blisters has been variously given; *namely*, as evacuants, resolvents, attenuants, stimulants, cordials, antispasmodics, &c. as well as to discharge morbid humours, and to produce revulsion; but *counter-irritation* is now the only satisfactory principle. Blisters are most useful in fevers attended by much head-ach; and, when early employed, have often cured the disorder immediately.

Of relaxants and antispasmodics.—As it is not probable that *constriction* is essential to fever, the principle is erroneous upon which certain things have been employed, although in another way they may have been useful; such as antimony, saline draughts, Mindererus's spirit, the warm bath, fomentations, &c. The connection between the brain and the extensive surface of the skin, affected by the warm bath, suggests a satisfactory reason for the benefit of it in fever sometimes, especially alternated with the cold affusion. Fomentations to the head are suggested, from the analogy of their use in other topical inflammations.

The substances called *antispasmodics* were introduced from false theory, and are employed as *simple stimulants*, *narcotics*, sensorial stimuli, &c.

Of simple stimulants in the cure of fever.—The antient compounds of this kind, as *Theriaca Andromachi*, *Confectio Damocratis*, &c. are preferred on some accounts to simpler preparations. Simple stimulants are serpentaria and contrayerva, spices, ammonia, perhaps camphor, &c. Cayenne pepper was given in the dose of three grains every two or three hours, by Dr. Wright, in the yellow fever,

so long as debility with vomiting lasted, and till a generous warmth took place. Mercury was also exhibited at the same time till it affected the mouth. Dr. M'Lean, in the St. Domingo fever, used this spice (capsicum), baths of brandy, æther, &c. when the pulse sunk, and the vital energies declined. Agues have been cured by Cayenne pepper, and the other stimuli. These facts may seem adverse to the doctrine maintained in this work, that fever is founded in inflammation; but the author shews that in many other inflammations, as in rheumatism, certain pulmonary inflammations, and other active topical affections, this class of remedies has been found serviceable.

Of the cinchona in fever.—Morton employed the bark in almost every febrile disorder, considering that in most there was an intermittent type concealed. Others have imagined that this remedy *locked up* the supposed noxious matter of fever, and have denied its efficacy in destroying fever. Some have used it to remove debility, in every stage of fever. Others again employed it as an antiseptic. It probably, the author thinks, only acts as a *tonic*, by removing a cause of weakness, and not by any direct agency as a strengthener. As a febrifuge, authorities are quoted for its extraordinary efficacy, and others for its inefficacy or doubtful service. It is improper in active inflammations; but in the advanced stages, with debility, it is a valuable remedy, as well as when the inflammation assumes a remittent or intermittent type.

Of sensorial stimuli.—These are called in common language *narcotics*, *hypnotics*, *anodynes*, and *sedatives*. The chief articles are opium, cicuta, bel-

ladonna, hyoscyamus, stramonium, nicotiana, lauro-cerasus, the black cherry, the bitter almond, and many other fruit kernels, camphor, digitalis, the tea-plant, especially *green tea*; æther, wine, and alcohol. To this head belong, perhaps, certain fungi, certain gases, as nitrous oxide, carbonic acid, &c. All of these, however different on other accounts, disturb primarily the functions of the brain or common sensory.

Opium is a stimulant to the brain, and increases its vascular action: hence it is hurtful in the early stage of fever, there being then active inflammation, denoted by throbbing, distensible pain, heat of the head, want of sleep, flushing of the face, and suffusion of the eyes; but subsequently it is useful. The author mentions that about six grains of powder of hops were given at Edinburgh as an anodyne, in 1802-3, in place of twenty drops of tincture of opium, and the effect was, that the patient often passed a quieter night; but not, the author thinks, from any positive influence of the hop, but because the opium before given had rendered the patient more disturbed. Castor, musk, Hoffman's *anodyne liquor*, &c. have been used instead of opium; and even wine and alcohol, which increase so much more the vascular action of the brain, are serviceable in the later periods, when torpor and languor have succeeded to violent action. It is not agreed among practitioners whether camphor is *heating* and stimulating, or *cooling* and sedative: in large quantities it has produced sudden death in animals; and in man it has occasioned stupor, delirium, furor, and convulsions: accordingly, it must be ranked among the *sensorial stimuli*. Eight or ten grains of camphor, with one of opium, is one of our most powerful sudorifics, and in this way the unpleasant effects of opium are prevented.

Digitalis must rank with the sensorial stimuli. It acts primarily on the brain, the author says, and through this on the vascular system. It does not, like alcohol, induce accelerated circulation, throbbing of the arteries, flushing of the face, and augmented temperature. It also differs much from opium.

Nicotiana, another of the sensorial agents, promises to be an useful remedy, by its property of reducing the vascular action, and even particularly in the brain itself. It enfeebles the heart and arteries more than the fox-glove. Infusion of tobacco has been used for clysters in the yellow fever.

Green tea is proposed, because the stupor and headach of fever are nearly allied to intoxication, which this article is known to relieve. The dose, however, should be large, on account of habit having rendered it less active.

Mental emotions, as terror, has cured intermittents. Dr. Jackson used gestation in the open air with good effects in America. Persons stupefied by large doses of opium are prevented from sleeping with advantage. A dog, after giving him *nux vomica*, was severely beaten, and no disorder ensued. Perhaps the *datura stramonium* may be useful in fever, although it is said to occasion remittent and yellow fever.

[To be continued.]

ART. 19. *Essai sur les Propriétés Médicales des Plantes, comparées avec leurs Formes extérieures et leur Classification naturelle: i. e. An Essay on the Medical Properties of Plants, as compared with their external Forms and natural Classification.* By J. DECANDOLLE. 4to, 1806. Paris, VOL. XV. P.

THE *Materia Medica*, which is founded wholly on experience, possesses but three means of judging of the properties of bodies; their sensible qualities, chemical composition, and natural analogy or botanical distinction. The object of M. Décaudolle in the present work, is to determine in what degree the analogy between the external forms of vegetables furnishes indications with regard to their medicinal properties.

Camerarius was the first, who, in 1699, ascertained positively the affirmative of this question. He has been followed by Isanflamm, Wilka, Gmelin, and particularly by Linnæus and Jussieu. On the other hand, Vogel, Platz, and Gleditsch, have combated this opinion in their writings. In spite of this, however, M. Décaudolle has taken up the question in a new point of view, the necessary result of the immense progress that has been made in natural philosophy and the study of the natural relations of bodies within the last twenty or thirty years; or else the reason may be, that, not adhering exclusively to any system, he drew his conclusions not from any insulated families, but from the whole vegetable kingdom.

M. Décaudolle begins by establishing the proofs that the medical properties of plants have a determined relation to their external forms. In fact, no person can doubt that the properties of drugs depend upon either their physical nature, or their chemical composition. But, in organized bodies, the nature of the products is determined by the form of the organs; since the same aliment, when digested by different beings, produces different results; consequently, the products are in relation to the forms. This reasoning is applicable to the vegetable kingdom, although the classification of

plants is generally formed, not from the organs of nutrition, but from those of reproduction ; for the natural classes deduced from one function necessarily agree with those deduced from another function.

These general results are confirmed by the observation, that herbivorous animals often avoid or seek all the plants of the same family ; that those which seem determined to feed on only one single plant, frequently consent to eat those of the same genus or family ; and again, plants, and especially the parasite funguses, shew the same election for certain genera or for certain families. To this we may add, that many exotic medicines, which were at first supposed to be derived from a single plant only, have been since found to be furnished by many species of the same genus ; and with regard to indigenous drugs, the different species of the same genus have been long accustomed to be employed reciprocally, one for another. And the remarks of travellers prove, that plants of the same family are often employed in the same uses in countries far distant from one another.

Notwithstanding these assertions, which the author proves by numerous examples, it cannot be denied that plants which nearly approximate to each other in natural characters present anomalies sufficiently marked. And in order to estimate the real extent of the relation in question, the author passes in review the rules of comparison between the forms and properties of plants.

He first lays down the position, that although we are accustomed to arrange species into genera, genera into families, and families into classes, in an uniform manner, yet these groups are far from being really separated at equal distances ; for in certain families the species differ from

one another by slight modifications only; while in other instances they differ in more important characters.

2. It is contrary to the spirit of classification to compare the properties of a certain organ, or of a certain juice, with the properties of another organ, or another juice. This cause is, however, the most frequent of those which have led to error.

3. The circumstances of the age of the individuals, of the season in which they are gathered, the soil in which they grow, the degree of light to which they have been exposed, &c. are so many causes of error which should be avoided in the comparison.

4. Unequal mixtures or combinations of the different principles are found in the organs or juices of certain families; and it is in these very families that many of the most striking anomalies are found.

5. In the comparison of the properties, regard should be had to the difference which may exist in the mode of extraction and preparation of the drugs: these circumstances often have as much influence, as their intrinsic nature.

6. We ought to exclude from the comparison the mechanical or accidental properties which depend upon circumstances foreign to the true nature of the bodies.

7. We ought, above all, to pay a scrupulous attention, not to the remote consequences of the application of a medicine, but to its primary mode

of acting; for medicines that are really similar, act differently according to the organ, or particular case, in which they are employed; and *vice versa*.

After the exposition of these principles, the author reviews all the families which compose the vegetable kingdom. He details the properties of the plants which compose them; not only of those which are employed in our European dispensaries, but also of the plants which the people of different parts of the world employ in the cure of their diseases. This part of the work of M. Decandolle is a complete and methodical display of the properties of vegetables. From this exposition it results that, out of seventy-six families, the properties of which are known, there are seven in which the law of analogy is violated; twenty-three in which it is perfectly preserved; and forty-six in which it is perceptible with a small number of exceptions.

ART. 20. *A Copy of the Answer to the Queries of the London College of Surgeons, and of a Letter to the College of Physicians, respecting the Experiment of Cow-pox.* By JOHN BIRCH, Surgeon Extraordinary to the Prince of Wales, and Surgeon to St. Thomas's Hospital. To which is added the second Edition of "Serious Reasons for uniformly objecting to the Practice of Vaccination." &c. 8vo, 104 pages, price 3s. London, 1807. Harris.

MR. Birch's readers have a right to complain of being *taken in* on the present occasion; for of the 104 pages of which this pamphlet consists altoge-

ther, scarcely twenty are devoted to the Answer to the Colleges, the remainder being merely a republication of the author's "*Serious Reasons*;" and it was hardly fair to make the public so soon pay twice over for the same work. A six-penny pamphlet would have easily included every thing original here contained. Leaving this, however, to the conscience of the author or his publisher, we proceed to the contents.

While the author allows that the College of Physicians took the most unexceptionable method that could be devised to ascertain the real state of vaccination, by application to the public bodies and to individuals for the result of their experience on the subject, he thinks that the returns do not justify them in recommending the practice in the manner they have done. In the answers returned to the queries issued by the College of Surgeons, they have been informed, he says, of 56 cases of failure, of 66 of consequent eruption, of 24 of bad arms, and of 3 deaths. These facts alone, he observes, disprove the assertions made before the House of Commons on which the vote in favour of vaccination was passed; and would have been sufficient to have overthrown the practice of inoculation, when that experiment was first introduced.

"The public, however," Mr. B. adds, "ought to be informed, that of more than 1100 persons, to whom queries were addressed by the College of Surgeons, only 426 returned answers. Why nearly two-thirds of those gentlemen were silent, when so many of them had been, in an early stage of the experiment, the warmest advocates for it, I do not mean to enquire; but I must argue that the College of

Physicians were not authorized to draw any conclusions in favour of vaccination from the facts before them. If so many cases of failure, eruption, and death, have been admitted from so small a return to the queries issued, what might have been the number," it is asked, "had all the answers been received? Why were not these answers sent? Why was not the cause of silence ascertained? or how could so general a conclusion be warranted from such imperfect premises?"—These are questions undoubtedly, upon the answer given to which much of the merits of the subject in dispute turns: but they are not likely soon to receive a satisfactory answer.

The reply given by Mr. Birch to the queries of his College will be readily anticipated by those acquainted with his former writings on vaccination. In answer to the 4th question, "To what cause do you impute the decrease of the practice of vaccination?" the author assigns especially three causes. Besides the want of confidence in the public, arising from the repeated failures, and other mischiefs known to have occurred, he adduces, 1st, the disagreement of the two societies, the *Original Vaccine Institution* and the *Jennerian Society*, instituted for its support, upon many essential points. Their statements, he says, are so discordant, and so opposite, that he does not see how any dispassionate person can make up his mind as to the opinion he ought to form, or the guide he ought to follow. Thus the Royal Jennerian Society insists on two sorts of cow-pox, a *genuine* and a *spurious*; while the *Original Institution* maintain that there is only one sort: the latter recommend that the patient should be *twice* vaccinated, as a test of security; the former do not allow such a practice to be necessary, or to be at-

tended with any advantage.—This discordance undoubtedly is calculated to weaken the confidence of the public in the new practice, though we cannot admit, with our author, that it goes the length of proving it to be a fallacy. It only shews that we have yet much to learn on the subject, and that the practice should be suffered to take its course, in order to its perfect elucidation by means of future experience. Compulsion, however, is quite out of the question. Vaccination, as well as variolous inoculation, should be left to the option of individuals; and there is no doubt that the least objectionable in all respects, will ultimately obtain the preference.

THE
MEDICAL AND CHIRURGICAL
Review.

OCTOBER 1st, 1807.

ART. 31. *A Treatise on Insanity, in which are contained the Principles of a new and more practical Nosology of Maniacal Disorders than has yet been offered to the Public; exemplified by numerous and accurate Historical Relations of Cases from the Author's public and private Practice: with Plates illustrative of the Craniology of Maniacs and Idiots. By PH. PINEL, Professor of the School of Medicine at Paris, late Physician to the Asylum de Bicetre, &c. Translated from the French by D. D. DAVIS, M. D. Physician to the Sheffield General Infirmary. 8vo, 288 pages, price 9s. London, 1806. Cadell and Davies.*

THE Treatise of M. Pinel, of which a translation is here presented to us, was preceded by two detached memoirs on the same subject, both of which were noticed in former volumes of our Journal. The titles of them were, *On Periodical or Intermittent Mania**, and *On the different Species of Mental Derangement.†* These have

* See *Med. and Chir. Rev.* vol. vi, p. 305.

† *Ibid.* vol. viii, p. 98.

been now incorporated in the present work, so as together to exhibit a general view of Insanity, its varieties, consequences, and mode of treatment.

Of those who have devoted themselves to the treatment of maniacal disorders more particularly, and who of course must be supposed to be best acquainted with the subject, very few have given their observations to the public. They have rather, indeed, affected a secrecy bordering on mystery (claiming, as it were, an exclusive right to the management of patients of this description); thus depriving the community of those fruits of their experience, to which they have undoubtedly a just and legitimate claim. We must, however, except from this censure two late writers of our own country, who, though they have by no means exhausted the subject, have nevertheless presented us with many important observations upon it, which have not a little tended to ameliorate the condition of this wretched class of people, by shewing the great importance of combining a humane and moral treatment with the medical direction of them. We allude particularly here to Mr. Haslam's *Observations on Insanity**, and Dr. Cox's† late work on the same subject. The present *Treatise* of M. Pinel, however, is by no means superseded by either of these, nor by any other we are acquainted with. He has treated the subject with much discrimination, the result of long continued and extensive experience. The work is particularly valuable by the humanity which characterizes it, and which does great honour to the author's feelings. The interesting nature of it, as well as its importance in a practical point of view, will induce us to examine it considerably in detail.

* See *Med. and Chir. Rev.* vol. v, p. 186. † *Ibid.* vol. xi, p. 291.

The work is prefaced by an Introduction from the translator, of considerable length, containing a neat and succinct history of the subject, from the earliest ages to the present time. The various theories that have been employed by different writers are canvassed with freedom, and for the most part, as might have been expected, rejected. Dr. Davis's character of the present Treatise appears to us so appropriate and judicious, that we shall give it in his own words.

"In the present volume," Dr. D. remarks, "the observations of an enlightened foreigner are offered to the English public. Whatever other merit they may possess, the subject is considered throughout in an easy, practical, and interesting manner. Evidently acquainted with the literary sources from which others have borrowed with considerable reputation, he has chosen, in this essay, to report his own observations, opinions, and practice exclusively. The facts, therefore, with which the volume abounds, are generally illustrative of positions of his own, which are often original and always practical. His object has necessarily excluded many psychological and all metaphysical disquisitions. His methodical distribution is not established so much upon the principles of pneumatology as upon the striking differences of character exhibited upon a large scale, by persons labouring under these formidable disorders. Though it has not been pursued to its remote branches, so as to exhibit the numerous varieties of maniacal diseases, with that scientific minuteness of which we suppose it capable, it nevertheless exhibits the great and boldly sketched outlines of a more practical system of nosology than we have yet seen upon the subject. But this volume is chiefly valuable for the great attention to the principles of the moral treat-

ment of insanity which it recommends. Works of practical value usually leave some one strong and permanent impression on the mind. The inestimable importance of moral management is the great key-note founded by the present author almost in every subdivision of his treatise. This part of the subject is examined in all its bearings, and accompanied by examples of the methods, for subduing the extravagancies and arresting the hallucinations of the insane, which were adopted in the lunatic establishments over which Dr. Pinel so ably presided."

The first section treats of periodical or intermittent insanity. The author properly begins with this, as it is not only, he observes, the most common form of the disease, but the symptoms which mark its accessions correspond with those of continued mania: and as its paroxysms are of a determined duration, it is not difficult to mark their progress, their highest development, and their termination.

Maniacal paroxysms generally begin immediately after the summer solstice, are continued with more or less violence during the heat of summer, and commonly terminate towards the decline of autumn. Their duration is usually limited within the space of three, four, or five months; but there are many exceptions to this, as well as to the season of attack. Maniacs of all descriptions, however, are subject to a kind of effervescence or tumultuous agitation upon the approach either of stormy or very warm weather. They then walk with a firm but precipitate step; they declaim without order or connection; and they express their feelings by clamorous and intemperate vociferation. Two instances are mentioned, in which the return

of paroxysms occurred at very distant and unusual periods of time; one, after an interval of three years, and the other four. Other instances are mentioned, where the returns appeared to be independent of the influence of seasons: these, the author observes, though less frequent, are much more difficult of cure.

M. Pinel next endeavours to shew that the character of maniacal paroxysms does not depend upon the nature of the exciting cause, but upon the constitution of the individual. Men of robust constitutions, of mature years, with black hair, and susceptible of strong and violent passion, appear to retain the same character when insane. Their ordinary energy is enhanced into outrageous fury. Violence, on the other hand, is seldom witnessed in the paroxysms of individuals of more moderate passions, with brown or auburn hair. Nothing is more common than to see men with light coloured hair sink into soothing and pleasurable reveries; whereas it seldom or never happens that they become furious or unmanageable: the disease in them, however, often degenerates into fatuity.

The author afterwards describes the appearances which indicate the approach of maniacal paroxysms, and the changes in the affections of the mind which take place under them. In some instances of mental derangement, all the powers of the mind are either absolutely enfeebled, or more than usually excited. In other instances, the change or perversion affects but one or a few of the intellectual faculties, while the others are found to acquire a new degree of development and activity. It is not uncommon to see maniacs absorbed by one idea exclusively, while others, during their parox-

ysms, are incessantly agitated: they laugh, cry, and sing by turns, discover a most versatile mobility, and are not able to fix their attention for a single moment. The faculty of memory is likewise variously affected. In some instances it is entirely abolished, so that the patient in his lucid intervals retains not the least recollection of his extravagant and inconsistent actions: but there are others who can retrace with great accuracy all the circumstances of the paroxysms, all the absurd positions which they maintained, and all the violence of passion in which they indulged.

“The faculties of reflection and reasoning are visibly impaired or destroyed in the greatest number of cases. But I have seen some, where either or both of those faculties have retained all their energy, or have recovered themselves speedily upon an object presenting itself calculated to attract and to fix the attention. I engaged a person of this class, naturally of excellent parts, to write a letter for me at a time when he was maintaining very absurd and ridiculous positions. This letter, which I have still by me, is full of good reasoning and good sense. A silversmith, who had the extravagance to believe that he had exchanged his head, was at the same time infatuated with the chimera of perpetual motion. He got his tools and set to work with infinite resolution and obstinacy. It may be easily imagined that the discovery in question was not made. There resulted from it, however, several very ingenious pieces of machinery—such as must have been the effects of the profoundest combinations.”

Maniacal paroxysms are often characterized by a high degree of physical and mental energy. The nervous excitement in these cases affects the system

not only physically, by increasing muscular power and action, but likewise the mind, by exciting a consciousness of supreme importance and irresistible strength. The imagination is sometimes exalted to the highest pitch of development and fecundity. Thoughts the most brilliant and ingenious, comparisons the most apt and luminous, give to the maniac an air of supernatural enthusiasm and inspiration.

The author next inquires, are all lunatics equally capable of supporting the extremes of cold and hunger? There are many exceptions to this. "This energy of muscular contraction," the author observes, "is far from being common to all the species of insanity. In many instances, on the contrary, there is present a considerable degree of muscular debility. General propositions have, likewise, been too often advanced in regard to the capacity of maniacs to bear extreme hunger with impunity. I have known several, who were voracious to a great degree, and who languished even to fainting from want or deficiency of nourishment. It is said of an asylum at Naples, that a low spare diet is a fundamental principle of the institution. It would be difficult to trace the origin of so singular a prejudice. Unhappy experience, which I acquired during seasons of scarcity, has most thoroughly convinced me that insufficiency of food, when it does not altogether extinguish the vital principle, is not a little calculated to exasperate and to prolong the disease.* One of the most dangerous symptoms in

* * Before the revolution, the daily allowance of bread was only one pound. The distribution was made in the morning. It was devoured in an instant. The remainder of the day was spent in delirium of hunger. In the year 1792, the allowance was increased to two pounds, and the distribution was made in the morn-

some cases of periodical insanity, is the obstinate refusal of food; a refusal which I have known some maniacs persist in for four, seven, and even for fifteen days together. To conquer so blind and so dangerous an obstinacy, deserves the utmost attention, address, and sagacity on the part of the medical and other attendants. It fortunately happens that patients thus affected will in general drink readily and copiously; a disposition which it is the duty of the physician most freely to indulge.

“The constancy and facility with which some maniacs support severe and long continued cold, appear to favour the supposition of a singular degree of intensity of the animal heat. It is not, however, very easy to ascertain this fact by the thermometer, as the experiment can be made and repeated with accuracy only during the intermissions of the disease.

“In the month Nivose (December and January), of the year 3, when the thermometer marked very low degrees of atmospheric temperature, a maniac could not bear his clothes on, which were of flannel—so rapid was the evolution of the natural heat of the system. He sat up whole nights together in his chamber, with no other covering than his shirt; and, no sooner was the door opened in the morning, than he ran in that condition to the interior court of the hospital, where he seized upon handfuls of snow, and applied it to, and left it to melt on his naked bosom. This process appeared

ing, at noon, and at night, with some soup carefully prepared. This, no doubt, is the cause of the difference of mortality observable on accurately consulting the register. Out of one hundred and ten maniacs received into the hospital in 1784, fifty-seven died. The proportion in 1788 was ninety-five in one hundred and fifty-one. On the contrary, during the second and third years of the republic, the proportion of deaths was as one to eight.

to give him unspeakable delight and satisfaction. Such a propensity for applying, and capacity of resisting the effects of cold, are, however, by no means universal. There are many, on the other hand, who are affected severely by cold, even during their accessions. How common is it in the winter season to see the patients at lunatic hospitals crowd about the fire? Seldom has a whole year elapsed, during which no fatal accident has taken place at the Asylum de Bicetre, from the action of cold upon the extremities."

This incapacity to support cold and hunger in certain cases of mania is often accompanied with marks of great debility, a natural consequence, it should seem, of the previous state of excitement, and which requires the use of tonic and stimulant remedies, as well as a nutritious diet. The prevention of relapses consists chiefly in the avoidance of all the remote causes, whether moral or physical. Several instances are mentioned, where the accession of violent paroxysms of insanity seemed to be the prelude to a cure in cases where the intellectual faculties appeared nearly obliterated, and the patient had sunk into almost a state of idiocy. This the author supposes to be induced by a kind of re-action in the system, or an effort of nature to remove the disease; but a more satisfactory explanation of the phenomenon, we think, seems to offer itself, in the increase of activity or energy induced on the brain by inflammatory action.

In the second section, the Moral Treatment of Insanity is considered. M. *Pinel* first inquires into the foundation of that superiority which the English physicians claim in their management of lunatics: his estimate of their pretensions, and of

the value of their works, may be collected from the following paragraph.

“English physicians,” it is observed, “give themselves credit for a great superiority of skill in the moral treatment of insanity; and their success, frequently under the veil of secrecy, has given a sanction to pretensions to which they have no just nor exclusive claims. I have for the last fifteen years paid considerable attention to the subject, and consulted all the works which have appeared upon it in the English language, as well as the reports which English travellers and physicians have published, in regard to their numerous lunatic establishments. I have discovered no secret; but I approve of their general principles of treatment. Of the celebrated Willis it has been said, that the utmost sweetness and affability is the usual expression of his countenance. But, when he looks a maniac in the face for the first time, he appears instantly to change character. His features present a new aspect, such as commands the respect and attention even of lunatics. His looks appear to penetrate into their hearts, and to read their thoughts as soon as they are formed. Thus does he obtain an authority over his patients, which afterwards co-operating with other means, contributes to restore them to themselves and to their friends. But Dr. Willis’ general principles of treatment are no where developed, and applied to the character, intensity, and varieties of insanity. Dr. Arnold’s work upon this subject, which he published in London, in 1786, is principally a compilation from different sources,—scholastic divisions, more calculated to retard than to accelerate the progress of science. And as to Dr. Harper, who, in his preface, announces an intention of departing from the beaten path; does he fulfil his

promise*, and is not his work more of a commentary upon the doctrines of the ancients than an original production upon mental indications? Again, I cannot help admiring the courage of Dr. Crichton, who has lately published two volumes upon maniacal and melancholic affections, merely upon the basis of some ingenious elucidations of the doctrines of modern physiology, which he extracted from a German journal, and which he accompanied by a description of the moral and physical effects of the human passions†. I respect Dr. Fowler's little essay, upon his establishment in Scotland, for the pure and elevated principles of philanthropy which it contains, and which are applied with great felicity to the moral treatment of insanity. But I do not find that he has advanced any thing new upon the subject."

A considerable number of cases are related of the successful application of moral treatment, especially when conducted upon principles of lenity and sometimes of indulgence. This plan appears to have succeeded in many instances where the opposite had been unavailingly employed, and the patients considered as incurable. The treatment of maniacs, however, requires to be varied according to the specific characters of their hallucination. Furious ones are to be coerced, but not by cruel treatment. It is a principle with the author to allow every maniac all the latitude of personal liberty consistent with safety, and to proportion the degree of coercion to the demands upon it from his

* "A treatise on the real cause and cure of insanity, &c. London, 1789.

† "An enquiry into the nature and origin of mental derangement, &c. London, 1799.

extravagance of behaviour; to use mildness or firmness of manner, as occasion may require.

The expedients here suggested, as occasionally necessary to be used for repressing violent and dangerous maniacs, with instances of their actual employment, are well worth notice. "The great secret of mastering maniacs of this character, without doing them injury or receiving violence from them, consists in going up to them boldly and in a great body. Convinced of the inutility of resistance, and impressed with a degree of timidity, the maniac thus surrounded will often surrender without further opposition or reluctance. An instrument of offence will, however, sometimes arm him with extraordinary resolution. A madman shall be suddenly seized with a paroxysm of phrenetic delirium, with perhaps a knife, or a stone, or a cudgel in his hand at the time. The governor, ever faithful to his maxim of maintaining order without committing acts of violence, will, in defiance of his threats, march up to him with an intrepid air, but slowly and by degrees. In order not to exasperate him, he takes with him no offensive weapon. As he advances, he speaks to him in a firm and menacing tone, and gives his calm advice, or issues his threatening summons, in such a manner as to fix the attention of the hero exclusively upon himself. This ceremony is continued with more or less variation until the assistants have had time, by imperceptible advances, to surround the maniac, when, upon a certain signal being given, he finds himself in instant and unexpected confinement. Thus a scene which threatened so much tragedy, generally ends in an ordinary event. Disturbances will occasionally interfere with the tranquillity of all institutions, where the passions are licentiously gratified.

Lunatic establishments are peculiarly liable to such commotions. The prevention of conspiracies and tumults by anticipation is always preferable to their suppression by violence or active contest:—either will frequently require such a variety and combination of measures as the greatest sagacity and longest experience can supply. Lunatics, even during their lucid intervals and convalescence, are disposed to be passionate upon very slight causes. Quarrels amongst the patients—specious complaints of injustice—the sight of a sudden seizure by a maniacal paroxysm—any object, real or imaginary, of murmur or discontent, may become a source of great disorder, and be communicated like a shock of electricity from one end of the hospital to the other. Meetings are called, parties are formed, and commotions stirred up as in popular insurrections, which if not suppressed in their very commencement, may be succeeded by very unpleasant and possibly by disastrous or fatal consequences. Upon the appearance of tumults of this kind, I have more than once seen the governor of Bicetre brave with wonderful courage the violence that threatened him, move about and mingle in the effervescence with the rapidity of thought, seize the most mutinous, and provide for their instant security, and thus, in a very short time, restore tranquillity to the institution.”

The following instances shew the power of art and address in overcoming the violent propensities of maniacs, by appearing to assent to their absurd propositions and fanciful ideas. In these respects, the governess of the Bicetre appears to be uncommonly well qualified for her office. “I have seen her,” says M. Pinel, “with astonish-

ment, go up to the most furious maniacs, and by soothing conversation and artful proposals, abate their fury, and prevail upon them to take nourishment when it had been obstinately refused from every other hand.

“A maniac, reduced to extreme danger by stubborn abstinence, threw himself into a great passion, and repelled the victuals which the governess had brought him, with rudeness and abuse. Dexterous by nature, and rendered still more skilful by experience, she veered about in a moment, acquiesced in his purpose, and even applauded his delirious conduct. She then skipped and danced, told droll things, and at length made him laugh. Availing herself of this favourable moment, she persuaded him to eat, and thus saved his life.

“Three maniacs, who all believed themselves to be sovereigns, and each of whom assumed the title of Louis XVI, were one day disputing their respective rights to the regal office and prerogatives with more warmth than appeared consistent with their mutual safety. Apprehensive of consequences, the governess went up to one of them, and took him a little aside: ‘How happens it,’ said she, addressing him with great gravity, ‘that you should think of disputing with such fellows as those, who are evidently out of their minds? We all know well enough that your majesty alone is Louis XVI.’ Flattered by this attention and homage, this gentleman immediately withdrew, looking at his rival disputants as he retired with ineffable disdain. The same artifice succeeded with a second, who left the other in undisputed possession of his honours. In a few minutes no vestiges of the quarrel remained.

“I remember to have admired, on one occa-

on particularly, the fertility in expedients for mastering maniacs possessed by this valuable woman. A young man, who had been calm for several months, and at liberty in the interior court, was suddenly seized by a paroxysm of his complaint. He stole into the kitchen, took up a knife and some vegetables, which he began to chop, and insisted upon entering in defiance of the cook and other servants, who attempted to impede his progress and to disarm him. He jumped upon the table, and threatened to take off the head of the first man that dared to approach him. The governess, with more recollection than fear, instantly changed her mode of attack, and appeared very much to disapprove of the assault upon him. 'Be quiet,' said she: 'why prevent so strong a man from giving me that assistance which he is so capable of?' She then addressed herself to the madman with great good humour, desired him to go to her, to receive proper instructions in the business of preparing the vegetables, and congratulated herself on having in him an assistant so well disposed and so able to serve her. The maniac, deceived by this innocent stratagem, complied with the invitation, and fell to work with great satisfaction. But, as he was receiving his instructions, and the governess took care to instruct him with the knife in her own hand, he was surrounded by the domestics, taken without difficulty or danger, and instantly carried away to his chamber. I might defy the most skilful of either sex, and the most conversant in the management of maniacs, to seize with more firmness and promptitude a method better adapted for disarming a raving madman."

Section 3 treats of Malconformation of the Skulls of Maniacs and Idiots, with the view of

determining how far derangements of the understanding are connected with a change or lesion of some part of the head. The result of the author's inquiry seems to be, that mania has no relation to such malformation, but that many cases of idiocy may be traced to such a source.

The next section gives the Nosology of Mental Derangement, or the distribution of it into different species: but this, with the medical treatment, must make the subject of a future article.

ART. 32. *Observations on the Preparation, Utility, and Administration of the Digitalis Purpurea, or Fox Glove, in Dropsy of the Chest, Consumption, Hemorrhage, Scarlet Fever, Measles, &c. ; including a Sketch of the Medical History of this Plant ; and an Account of the Opinions of those Authors who have written upon it, during the last thirty Years.* By WILLIAM HAMILTON, M.D. Physician, Bury St. Edmund's, Suffolk. Illustrated by Cases. 8vo, 214 pages, price 6s. London, 1807. Longman and Co.

THE introduction of the digitalis into general practice, through the exertions chiefly of Dr. Withering, may be ranked among the most valuable acquisitions to the Materia Medica that have been made of late years. By it we have been enabled to combat with success many cases of disease that yield with difficulty to any remedies, and to relieve at least others which before were scarcely under the physician's controul.

The digitalis, however, was not unknown to physic long prior to the æra mentioned: but it was in the hands principally of the vulgar and unskilful,

whose injudicious use of so powerful a drug, with the deleterious consequences often resulting from it, was well calculated to prevent its general employment by practitioners. Accordingly, when Dr. Withering called the attention of the faculty to it, neither its preparation, doses, nor mode of administration were at all understood. Since this period, the digitalis has been in every body's hands, and many treatises have been written in commendation of its virtues. Like many other medicines, its powers, probably, have been over-rated; at least it is fair to judge so, from the discordance which still subsists among practitioners with regard to it.

The work before us, though highly in favour of this remedy, is by no means indiscriminate in its praise. The author has not been backward to record his disappointments from its use, as well as his success. Yet we fear his brethren of the faculty will not coincide with him in sentiment, when he asserts in the introduction, in regard to its use in hydrothorax, that 'since he has adopted the effective use of this medicine in such cases, he has never seen one, however advanced or desperate, that was not speedily relieved by it;' and that it is possessed of powers 'almost approaching to certainty of effect.'—This, we apprehend, will be thought in general too flattering a picture.

Dr. Hamilton commences his work with the Medical History of the Fox Glove, from the period of its first use by Dr. Withering, in 1775, to the present time. We have here the various and often discordant opinions of writers on the subject, with an account of the theories, or rather hypotheses, that have been employed in order to explain its good effects. One writer considers it as a *stimulant* to the absorbent system, in this way

producing its good effects in dropy, and ulcers in the lungs. Another affirms it to be one of the *sedative* poisons, and therefore to be improper in dropfical affections, which generally originate from debility. This writer would confine its use to cafes of increased tone, with great irritability of the nervous and arterial systems, as in mania and active hæmorrhage. Our author is of the same opinion as to its sedative properties; yet he asserts 'that digitalis is never useful in inflammation, at least until after considerable evacuation has preceded its exhibition.'—Either this is inconsistent, or the author's idea of a 'direct sedative' is different from that usually entertained.

Another writer, in language peculiarly his own, explains its mode of acting in the following manner: 'Founding, then, the *modus operandi* of digitalis on its stimulating efficiency in invigorating the arterial and muscular energy of the system;—denying that, in retarding the morbid frequency of the pulse, it reduces the force of arterial action;—and refusing contractility, or an independent absorbing power to the lymphatics;—it may be presumed that an adequate explanation of its mode of action may be afforded by considering it as a powerful narcotic stimulant, capable of impressing the stomach with additional motive energy, which, through associative influence, is propagated over the system, and more particularly exerted on the heart and arteries, by which are distributed to every part of the same an increased quantity of oxygenous and other vital principles, which may be necessary to retrieve and establish, both locally and generally, the healthy conditions of life.'—This author thinks that the beneficial agency of the digitalis is greatly increased and its deleterious effects lessened by small *doses*

‘ of either pork, mutton, or beef, not exceeding an ounce, rather underdressed, well masticated, and repeated every two hours, until six o’clock in the evening.’

We are not yet arrived at the end of these profound speculations with regard to the *modus agendi* of the *digitalis*: the latest writer on the subject observes, that its supposed sedative power is merely a deception; for that, ‘ when administered in appropriate quantities, it exhausts arterial action with so great a rapidity, that its stimulant power is neither perceptible nor injurious.’—Thus this Proteus in green garb ‘ *is every thing by turns, and nothing long.*’

But enough of this trifling—The next section treats of the cultivation and preparation of *digitalis*. The author is of opinion that its properties are not at all impaired by cultivation, as supposed by some: he appeals, indeed, to his own experience in proof of the fact. When the full diuretic powers of the plant are required, the infusion, Dr. H. remarks, is to be preferred, as it appears to exert this influence most completely when given in that form; while in dropsy, he says, the other preparations merit a decided preference over the tincture, *as they act more readily on the absorbent system.*—These conclusions appear to us extremely doubtful; because, in the first place, it is not probable that two such distinct properties should be contained in the same plant, and be capable of separation by any menstruum; and, in the next, because we cannot conceive any train of experiment by which such a conclusion could be satisfactorily established. While in excessive doses, the effects of all the preparations appear to be precisely similar.

Of the Exhibition of Digitalis; with practical Observations and Precautions.—Dr. Hamilton cautions us against giving the digitalis too frequently, as its effects are slowly produced; and violent symptoms sometimes take place all at once, before any signals of forbearance have been observed: once in eight, or at most six hours, is, he thinks, sufficient. Of the powder, half a grain is a sufficiently large dose to begin with.

In some instances, the digitalis cannot be made to reduce the frequency of the pulse, nor any of its salutary effects, before such violent symptoms appear, as compel us to abandon its use. The cause of this, the author thinks, is to be found in the presence of inflammation, or a tendency to inflammatory action, of the vascular system: as this is an important point in practice, and one upon which the author is at variance with physicians in general, we shall suffer him to speak for himself.

“In dropfy,” he says, “where this disposition (the inflammatory) is scarcely ever present, the circulation is commonly retarded by the use of digitalis; and in hæmorrhage, where this remedy produces more decided benefit, perhaps, than in any other species of disease, after the vessels have been emptied by repeated losses of blood, the depression of the pulse is almost invariable:—I presume, also, that in health no great difficulty would be found in causing this effect of fox glove. But in pneumonic inflammation, where the abatement of the impetus of circulation and the increased activity of the absorbents would speedily cure the disease, until considerable loss of blood have taken place, these favourable consequences of the exhibition of the plant will be looked for in vain. I am aware that authority of no mean weight may

be adduced against this decision. I have, however, been too often disappointed in my hopes of sparing the further loss of blood in inflammatory affections, and especially in pneumonia, by the agency of digitalis, not to be satisfied, that, however respectable the authors by whom it is supported, *the opinion of the powers* of this remedy over inflammation is incorrect. Towards the latter end of pleurisy, indeed, when bleeding proportioned to the severity of the attack and the strength of the patient shall have been premised, and when vomica notwithstanding seems likely to take place; or, if great secretion of mucus be present, and effusion apprehended; this remedy will then be found to deserve the full extent of Dr. Currie's encomium upon it, prefixed to this volume:—‘this medicine may almost be said to be possessed of a charm for allaying inordinate action of the heart and arteries; &c.’

“In consumption, if we endeavour to restrain the impetus of the circulation by the Fox glove, the same circumstances will be found to obtain in a degree proportioned to the inflammatory disposition of the vessels. When the pulse is hard and bounding, the countenance flushed, the heat and thirst considerable, and the difficulty of breathing—accompanied with pain of the chest—urgent; little advantage will be derived from the use of this remedy, until these symptoms shall have been removed; nor, indeed, can the pulse be readily or at all reduced in frequency when they are present, unless the digitalis be given in such ample doses as to produce unpleasant effects: and it is observed, that when the ill consequences arising from the use of this plant have once occurred, they become afterwards much more readily excited than at first. It is, therefore, essential that we should endeavour

to remove every symptom likely to obviate the beneficial agency of the medicine, if we would hope to experience full advantage from it, or even give it a fair chance of success.

“ When inflammation is supposed to be present in consumptive cases, where it is intended to make trial of the digitalis, its relief is consequently to be attempted by every mean likely to succeed, that has not too great a tendency to debilitate the patient, before the tincture is prescribed. A cooling regimen must be recommended. The diet should consist of milk, vegetables, and fruits; or, if any portion of animal food be allowed, it should be of the most digestible kind, prepared in the mildest form, and taken in very small quantities at a time. Acidulated drinks should be prescribed, and the patient enjoined to abstain from wine, spirits in every form, malt liquor, &c. &c.; all sources of mental or bodily exertion must also scrupulously be avoided. It may happen that a degree of pain shall exist in some part of the chest, that will not yield to blisters, or to any similar application; in such instances local bleeding must be had recourse to, or a general bleeding even may be requisite; and to prevent the return of such affections, or counteract their effects, it may be necessary to establish a permanent drain near the part.”

Dr. H. next offers his remarks on the utility of digitalis in hydrothorax, and other effusions of water within the cavities of the chest. Hydrothorax, he thinks, has increased in frequency of late years, arising from the greater frequency of gout, the subjects of which are often attacked by the symptoms of hydrothorax. A minute history of the symptoms of hydrothorax is given, and

the means of distinguishing it from other analogous affections, a task that is often not a little difficult. The distinction, however, is of the less consequence, as there is no disorder likely to be confounded with hydrothorax, that would not admit of the use of digitalis, with safety at least, if not with advantage.

Of the Utility of Digitalis in Phthisis Pulmonalis. The author's expectations of benefit from this remedy in consumption are very limited. It is during the early progress of the disease, if at all, he thinks, that we must look towards digitalis for any lasting advantages. It will certainly often occasion the relief of several symptoms, and even protract life, in the advanced stages; but when the disease has proceeded so far as extensively to ulcerate the lungs, this, he fears, will be found equally unavailing with every other remedy. The disposition to consumption is apparent in the rapidity of the circulation; and it is only by opposing this symptom, that the beneficial action of the digitalis is manifested.

Of the Utility of Digitalis in Hæmorrhage. According to the author's experience, the fox glove is more successfully applied in the cure of hæmorrhage, than in any other disease. The loss of blood takes off the inflammatory disposition, which is the principal cause of preventing the efficacy of this remedy, and it then scarcely ever fails to reduce the velocity of pulse, which for the most part is alone sufficient to cure the disease; and this effect can be kept up without difficulty, till the wounded vessels are entirely healed, and recover their accustomed power of resistance.

In scarlet fever, or rather in the hydropic affection which so often succeeds it, the good effects of the digitalis were experienced by Dr. Withering, and pointed out in his first publication on the subject. In measles, the author observes, the digitalis has been used with success by the late Dr. William Hamilton of London, who was accustomed to prescribe this remedy with the best effects in every period of the disease. Our author however thinks, that it is in the advanced stage of measles, when the disposition of the membranes lining the chest to inflammation shall have ceased, or have been overcome by appropriate remedies, that its use will be found most effectual in checking the consumptive tendency, so often left by this disease.

The appendix contains several cases of Hydrothorax, in which the digitalis was had recourse to with advantage; but as these have been already before the public in a periodical work, we shall not now stop to notice them. A second appendix is added by Dr. L. Maclean, of Sudbury, in which some further cases of the same disease are communicated. The experience of this gentleman, it seems, has been unusually extensive in hydrothorax; for the cases here furnished have been selected, he says, from about *eighty* well marked instances in his report-book. As it is insinuated 'that he has had more than ordinary success in the cure of this formidable disease,' it is right to inquire a little into the foundation of this superiority.

Dr. Maclean first observes, that when, in the disease alluded to, the limbs are of a dark livid hue; the patient of a full, corpulent, or what is termed a *cold phlegmatic habit*; the bowels con-

tive, more especially if they require the aid of active purgatives; very little, if any, advantage is to be derived from the fox glove, either alone or in combination, in the fullest doses, and administered with the usual precautions: on the contrary, by the distressing sickness, and other unpleasant symptoms which it produces, it seems to retard, he says, the salutary operation of other remedies.

The following remarks point out, though rather obscurely, upon what the uncommon success of Dr. Maclean depends. "Digitalis, squills, calomel, crystals of tartar, the fixed vegetable alkali, and a few other diuretics, when separately administered, will very seldom be found permanently to cure the disease; but by selecting, blending, and combining them together in certain proportions, according to the particular circumstances of every case, which in no two instances are precisely alike, each of these seems to acquire additional efficacy, and the most salutary advantages will result. And certain peculiarities of constitution will be found, in which some of these cannot be administered. Hence the necessity of the knowledge of the art of judicious selection and combination, which can only be acquired by long experience, aided by close and patient attention to the operation of medicine and the phenomena of the disease. I shall only observe, that by means of the combinations I have been in the habit of using, my object invariably has been to accomplish at once, or by one indication, what is generally attempted by three. Thus, while administering remedies for evacuating the water; the removal of any organic affection, or other cause, which may have occasioned its effusion, retard or prevent its absorption, as well as the restoring the lost tone and strength of the habit

at large, or of any particular organ, which generally forms a prominent feature of the disease; are held in view at the same time: hence, as these vary in degree and kind in every case, so those combinations must be varied also in the same proportion; and instead of increasing the degree of debility already existing, the strength very generally improves from the beginning."

As a means of instructing our readers in the nature of the combinations above alluded to, we had thought of selecting some few of the cases; but we fear they would scarcely accomplish the purpose. Where we find calomel, in doses to affect the mouth, resin of jalap, crystals of tartar, ginger, *spt. æth. nitros.*, and squills, administered in combination with the digitalis, it is no easy matter to say what, or whether any, share of the good effects experienced were derived from the last mentioned drug.

ART. 33. *Observations on the Application of Lunar Caustic to Strictures in the Urethra and Œsophagus.* By M. W. ANDREWS, M.D., Member of the Royal College of Surgeons, London; late Army Surgeon, and now Physician at Madeira. 8vo, 173 pages, price 5s 6d. London, 1807. Callow.

THE object of this Tract is not merely a defence of the application of the caustic in cases of stricture, but exclusively of the particular mode of using it inculcated by Mr. Home. Like many other advocates, our author is not sparing of his strictures on those who have presumed to recommend what seemed to them a milder and more humane employment of a very active if not dan-

gerous remedy. This, however, may perhaps be intended as a tribute of gratitude to his patron.

As the author does not profess to offer any thing new on the subject, but merely to notice some of the principal objections that have been made to the practice, and to endeavour to produce additional proof in favour of it, we shall pass over the different chapters which explain the Nature of Strictures—their causes—symptoms—effects—and general treatment; observing only, that, in the hands of our author, the remedy appears to have lost none of its terrors, nor to have secured the patient against future suppressions; which, however, are ascribed to spasm, affections of the brain, and in fact to any thing but the use of the caustic.

The writers against Mr. Home's mode of practice here noticed, are Dr. Rowley, Mr. Benjamin Bell, Mr. Jesse Foot, and Mr. Whateley. The objections made by the latter gentleman, of the caustic frequently producing pain—hæmorrhage—rigor—suppression of urine—fever—delirium—extravasation of blood in the perinæum—all which are admitted to occur occasionally—are thus repelled.

“ In making these objections, Mr. W. does not attend to one very material circumstance, a moment's reflection on which should convince him of the fallacy of his reasoning. From the time Mr. Home published the first edition, his practice in this branch has been most extensive; and, consequently, cases of the worst, as well as the mildest kind, have come under his care. Had he filled his subsequent publications only with cases which readily yielded to the treatment, and concealed

the rest, he would then have justly merited censure; but, on the contrary, the unsuccessful and difficult cases have equally a place with the others, and a greater stress is even laid on them; not
 ‘with that indifference which might lead to the
 ‘supposition that the symptoms, &c. are the un-
 ‘avoidable effects of the most judicious mode of
 ‘treatment* ; but to point out, ‘that accurate,
 ‘anatomical knowledge, joined to experience, is
 ‘absolutely and unavoidably necessary, to enable
 ‘the practitioner to follow up the treatment with
 ‘success, and to deter those, who, for want of
 ‘these advantages, cannot be adequate to the
 ‘task†.’

“There is one fact, which must be familiar to every observing practitioner, that the same complaint puts on different appearances, or is accompanied with different symptoms in different individuals, certainly depending on the constitution. This is very evident with strictures in the urethra, and ought to be taken into consideration as well as the treatment; and I believe it will be found, that most of the symptoms, which are said to arise wholly out of the application, have before appeared during the progress of the complaint, and are, of course, to be considered as increased or aggravated, but not brought on, by the treatment. In a very considerable proportion of cases it will be found, that the cure is completed without the occurrence of rigor, suppression, or fever; and when these symptoms do occur during the treatment, it arises from the constitution having been brought into a considerable state of irritation by the continuance and violence of the com-

“ * Vide Whateley’s advertisement.

“ † Vide Home’s Introduction to 2d vol.

plaint, to which is probably superadded a very intemperate mode of life."

Much stress is laid upon the necessity of using bougies of a large size, the want of attention to which, the author thinks, has been the cause of many of the inconveniences complained of. With respect to hæmorrhages, Dr. A. considers them as of much less importance than Mr. Whateley and others contend for. In hæmorrhages from the urethra, it is observed, the bladder is always kept in a state of irritation, and continually getting rid of its contents; and as, from the experiments of Mr. Home, we find that blood will mix uniformly with urine in equal parts, there is no difficulty in understanding that at least one half of the fluid, which passes off during a hæmorrhage of this kind, is urine.

Mr. Home having met with one instance where the caustic became detached from the bougie while in the urethra without any serious consequence ensuing, and the author having witnessed a similar case, he says, in general terms, that 'if the caustic should get loose, and be left in the urethra, it is not productive of inconvenience.'—This, we think, is presuming too much upon a fortunate event, and may lead to negligence that may sometimes prove extremely injurious. Either the caustic has not half the virtues ascribed to it, or it must in general prove a destructive agent in the urethra, in an occurrence of the kind mentioned.

The following chapter contains cases of stricture in the urethra, relieved by the application of lunar caustic, some of which had been previously treated by the simple bougie without effect. Cases of equal weight, we have no doubt, might be ad-

duced by Mr. Whateley in favour of his milder method of using the caustic.

The last chapter contains two or three cases of stricture in the œsophagus, in which the lunar caustic was had recourse to : with what effect, the following narration will shew. Instances of this formidable and distressing malady are so rare, and have been in general so unsuccessfully treated, that any thing which seems to reflect even but a faint light on the subject is deserving of attention.

“ CASE I. I. A., a Portuguese, gave the following history of his complaint. It first appeared in July, 1803, with a considerable hoarseness, after having taken much exercise, and exposed himself suddenly to the cold; the hoarseness continued for several days more or less troublesome. In October it increased so much, that he was with difficulty understood, accompanied with a dry and painful cough: from this period to February 1804, the cough increased, the expectoration became considerable, and occasionally his respiration was very difficult.

“ On the 24th of February, he experienced great difficulty in swallowing, and on the 15th could not swallow either solids or fluids. In this way he continued for eight days, receiving support from glysters. His medical attendant ordered an application of mercurial ointment and camphor, night and morning.

“ In the course of eight days, the spasm was so far removed as to enable him to swallow liquids in very small quantities; but in order to effect this, he was obliged to place his body in an almost horizontal posture, with his head rather elevated.

“ It was more than six weeks before he could

get down any thing that was solid, and this so trifling in quantity, and with so much caution as to his position, that it could not be depended upon as nourishment.

“ His cough continued increasing, the expectoration was considerable, evidently purulent, and often mixed with blood.

“ In May, 1804, I first saw him; he was in a very weak state, and much reduced. He could only swallow liquids, and those when in an almost horizontal posture.

“ At this time I considered his state of health so precarious, that I did not venture to suggest any mode of relieving the throat, but attended wholly to his constitutional symptoms. Various medicines were ordered, and, as in a few weeks he gained sufficient strength to be able to walk about the house, the complaint in his throat became an object of attention. I passed a bougie, previously curved, and found it met with a resistance in the œsophagus.

“ A bougie, armed with caustic, was passed on the following day, and, after eight applications at different intervals, he was enabled to swallow, either fluids or solids, in a perfectly erect posture. In two weeks after this, he caught cold, and the difficult deglutition again returned, though less violently than on the former occasion. Two applications of the caustic brought every thing right again, and he felt no further impediment to his swallowing till the day of his death, which was suddenly on the 10th of September.

“ The following were the appearances which I had an opportunity of examining after death. The œsophagus, when laid open from behind, shewed the situation of the stricture, a small portion of which still remained; the projection of it appeared like a little shelf; all the other part of

the canal was perfectly natural; the lungs were full of tubercles, some of which had suppurated.

“CASE II. A young lady, about 17 years of age, accidentally had a cherry-stone stick in her throat for a considerable time; it was at last brought up by the act of vomiting.

“This happened about the year 1787, from which period she was liable to repeated spasmodic affections at that part of the œsophagus, during the act of swallowing: a very small piece of bread touching this part, was frequently sufficient to bring it on, so that the food could neither be swallowed nor brought up for several seconds.

“Within the last few years, it had become very distressing, often occurring two or three times during a meal.

“In 1804, I first ascertained that these symptoms were produced by a stricture in the œsophagus, as a bougie of a small size could not be passed into the stomach; I therefore applied a caustic bougie previously curved to it, four or five different times, at the intervals of two or three days: the swallowing was evidently much improved by it, but after one application the throat inflamed and swelled, accompanied with very considerable pain, which extended to the Eustachian tube of the left side; the external ear was also much affected; it became necessary to apply a blister to relieve these symptoms, and as she was then advanced in pregnancy, I thought it prudent to decline any further continuance of the treatment at that period: since which she has always been in a very delicate state of health, in consequence of a pulmonic affection, so that the treatment could never be continued regularly for a sufficient time, to be productive of any permanent advantage; but whenever the throat was most

troublesome, and her other complaints would admit of the application of caustic, it always afforded relief.

“ Her pulmonic complaints at length getting the better of her constitution, I was anxious to examine the parts after death, and was much satisfied with their appearances, as I thought they afforded considerable information relative to the complaint and its treatment. What appeared of most consequence to notice, was the situation of the stricture, which was immediately behind the cricoid cartilage, at which part those that have been examined by Mr. Home was formed.

“ The œsophagus had no appearance of diseased stricture in any other part, but was narrower in its whole length than it is usually found to be, most probably owing to the great length of time that the stricture had been formed. The membrane immediately above the stricture was not at all injured by the application of the caustic. The aperture of the stricture was not larger than would admit of a crow's quill being passed through it, and the stricture, after the œsophagus had been slit open from behind, appeared to project from the inner membrane equally all round.

“ CASE III. A poor woman, about fifty years of age, applied to me in April, 1805. Since August, 1804, she had experienced great difficulty in swallowing any thing, either fluid or solid, and, within the last ten weeks, could get nothing into the stomach but what was perfectly fluid: any attempt to swallow solids produced vomiting.

“ On the 18th of April, I applied the caustic, and repeated it on the 19th and 20th. On the 21st, I passed an unarmed bougie into the stomach; on the 22d, 23d, and 25th, I passed a probang

with great ease, and, as she swallowed tolerably well, I allowed her to return to her friends in the country.

“In May following she came back to me, as she again found great difficulty in swallowing, the act often producing vomiting: on the 11th I applied the caustic, and repeated it on the 12th and 15th, after which she went into the country perfectly relieved.”

ART. 34. *An Inquiry into the Changes induced on Atmospheric Air by the Germination of Seeds, the Vegetation of Plants, and the Respiration of Animals.* By DANIEL ELLIS. 8vo, 246 pages, price 5s. Edinburgh. 1807. Murray, London.

THE investigation of the phenomena and changes induced in atmospheric air by the processes of germination, and vegetation, is of more importance than might at first be readily imagined. An analogy, not very remote, undoubtedly exists between these processes and the respiratory function of animals, which tends to throw light on the latter, and consequently to illustrate in some degree its diseases. These remote consequences, however, are here purposely kept out of sight, as a subject for future inquiry, which we trust the very ingenious author will find leisure to pursue: and if he but proceeds with the caution and judgment he has hitherto done, we can venture to promise the reader a rich harvest of useful and practical knowledge.

The author was first led to the investigation of the subject by finding the explanations hitherto given of the physiology and pathology of respiration in man to be very loose and unsatisfactory.

In the hopes of correcting these, he undertook to compare the facts ascertained in human respiration with those which have been observed in the respiration of the inferior animals; and, from the lowest order of animal beings, the transition to the analogous phenomena which occur in the vegetable kingdom, was natural and obvious. Thus, in a descending series, all the great classes of animated nature were successively brought under his review; and, arriving ultimately at the most simple form of existence, he was induced to make it the first subject of investigation, and then to retrace his steps through the more complex and perfect forms of vegetable and animal life.

The reasonings and deductions of the author are chiefly made from the facts and experiments recorded by the best accredited writers; and where those appeared to be erroneous or defective, he has supplied them by experiments of his own, made evidently with much caution and judgment. In the whole of his Inquiry, he has been studious to combine anatomical fact with those reasonings which relate immediately to the living system.

The work is arranged into chapters, the contents of which we shall notice in order.—*Chap. 1*, treats of the Changes induced on the Air by the Germination of Seeds.

It appears clear from the experiments of the author, that heat and moisture are the only agents essentially necessary to the commencement of germination in seeds. The process, however, advances but a little way, before the admission of air becomes necessary. Light does not appear to be requisite. The air necessary for the process of germination is evidently oxygen; for barley is

converted into malt (which is the first process of germination) by exposure to pure oxygen gas; while in nitrogen gas or azotic air, seeds do not germinate at all, though under all the other circumstances favourable to the process. Experiment however shews, that of all known gaseous bodies, the usual composition of the atmosphere is that which most facilitates germination, excess either of oxygen or azote being detrimental.

A quantity of carbonic acid is found in the air in which seeds have germinated very nearly in proportion to the quantity of oxygen which disappears. The formation of this carbonic acid is a curious and difficult question. The author infers, from all the experiments that have been made on the subject, that the carbonic acid is not formed from the substance of the germinating seed, but that this furnishes only one of the constituent parts of it, namely, the carbon. But as the carbonic acid produced is nearly equivalent in weight to the oxygen that disappears, it is plain that some portion of the oxygen must combine with the seed, while the rest unites with the carbon to form the carbonic acid.

In the second chapter the author examines the *Changes induced on Air by Vegetation*. The common opinion, first suggested, we believe, by Dr. Priestley, that growing plants emit oxygen gas during the day time, but carbonic acid in the night, is thus combated.

“Against the opinion of the absorption and emission of gases by the leaves of plants when growing naturally in air, we have already, both on physiological and on chemical grounds, been induced to enter our protest. That the same substance, carbonic acid, should during the day be

absorbed by the leaf, and decomposed within it as salutary, and during the night should be formed within the same leaf, and emitted from it as noxious, seems to be not only inconsistent but absurd. Where would be the advantage in the carbon of the acid being retained for twelve hours as food, if for the next twelve it must again be given out as excrementitious? Or where is there an instance, in the whole circle of existence, of a living agent not only first forming its own food, but feeding on its own excretions? If this carbon were during the day retained as food, whence comes *that* composing the acid which plants, when confined in a given bulk of air, are constantly forming? If oxygen gas, as these chemists suppose, be during the day constantly emitted, why does that gas gradually disappear as the process of vegetation proceeds? And why at last is none to be met with, although there is present an abundance of carbonic acid, out of which it is supposed to be formed? It has been proved that during the day carbonic acid, by the act of vegetation, is constantly forming; but if, at the same time, it be as constantly absorbed by the leaves, how can its presence be manifested in such quantity and in such progression as experiment evinces that it is? All these observations apply to the circumstances of plants growing naturally in air; when they are placed in water, other phenomena arise, from which have been drawn arguments in favour of an absorption and emission of gases by leaves. It has, however, been shewn by direct experiment, that when plants are confined in a given bulk of atmospheric air, they gradually and completely destroy its oxygenous portion; which could not possibly happen if they possessed the power of emitting oxygen gas. The experiments,

indeed, of Dr. Ingenhoufz himself teach us, that this supposed emission of oxygen gas does not depend so much on the power of the leaves as on the quality of the water in which they are immersed; for, if the water be previously boiled, little or no oxygen gas is collected. Hence, then, we see that to effect the separation of air from water the organized structure of the leaf is not only not necessary, but that the quality of the separated air is altogether different from what this supposed function of the leaves ought to supply. No proof, therefore, of the absorption and emission of gases, much less of oxygen gas, by the natural functions of leaves, can be derived from these experiments on plants immersed in water; and were the experiments even more precise, they would not in the least apply to the case of vegetables which flourish in the open air."

Chap. 3. Of the Changes induced on the Air by the Respiration of Insects, Worms, Fishes, and Amphibious Animals. M. Vauquelin found by numerous experiments, that grasshoppers and other insects, snails and slugs, and others of the vermes, produce similar changes on air with germinating seeds and growing plants. The oxygenous portion of the air disappears, while carbonic acid is produced; the nitrogen gas remaining unaltered. So completely is the oxygenous portion of the air removed by the respiration of slugs, that M. Vauquelin suggests the employment of these animals as eudiometers for ascertaining the purity of air. Spallanzani, however, differs from the conclusion of M. Vauquelin, as to the complete destruction of oxygen gas by the respiration of snails; he maintains likewise, that a portion of the nitrogen gas at the same

time disappears. But Mr. Ellis contends, that he overlooks, in his experiments, many circumstances which ought to have been attended to; whence his conclusions are quite unsatisfactory. The author's own experiments entirely coincide with those of the French chemist.

Assuming, then, as a fact, that the nitrogen gas of the air neither produces nor suffers change, the author proceeds to inquire what becomes of the oxygen gas, which in all cases is found to disappear? "Is it *absorbed*," he asks, "by any organized structure of the animal adapted to the performance of such an office? No vessels fitted for such a purpose have been yet demonstrated in the animal system. The small size of the stigmata, or breathing pores, in insects, renders them but little suited to be receptacles for containing and decomposing air: and, in many of the *vermes* class, the mucous matter with which their bodies are constantly smeared over, must oppose great difficulties to such an absorption. In the case of aquatic animals, these difficulties are still farther increased; for the air must be first separated from the water before it can be taken up by absorption; and, after this is effected, it is not easy to conceive how the gills of fishes can be rendered capable of absorbing and emitting air. It is not probable, that this air is taken up in its entire state, for as the nitrogen gas undergoes no change, its absorption can answer no obvious use, but would tend rather to impede the decomposition supposed to go on within the vessels, and the subsequent formation and emission of the carbonic acid. If, on the other hand, the air be considered to be decomposed previous to its absorption, then a new

compound must be at once formed ; and, if this be brought about by the union of some substance with the oxygen gas, then that gas, simply as such, cannot be held to enter into the animal system. No one has ever yet detected air in the animal fluids while in a healthy state; and if we consider the great extent of surface and extreme minuteness of the vessels in the gills of fishes, we cannot but consider them as well adapted to produce an extensive contact of surfaces, and but little fitted to absorb, decompose, and again emit aëriform fluids.

“ If to account for this supposed entrance of air into the vascular system, the agency of *chemical affinity* be had recourse to, by what means, we would ask, can its operation be in this case explained? No sensible or obvious principle, equal to such an effect, can be held to reside in the blood, since the changes go on equally in all these animals, though the blood be of various colours, and, in many instances, where it is totally devoid of colour. During a torpid state also, Spallanzani has shewn, that no change is effected by the animal on the air * ; and, consequently, no oxygen gas is then attracted by the blood, although, if the supposed carbon of that fluid be considered to attract this gas, the union ought still to proceed, because, according to the received opinions, the animal system is at this period surcharged with carbon. Neither can the conditions, indispensable to the operation of chemical affinity, be in these cases fulfilled ; for the interposition of organized substance between the air and the blood altogether precludes that degree of absolute contact, which is held to be essential to chemical ac-

“ * Memoirs on Respiration, p. 334.

tion. Even if the oxygen gas were attracted into the blood by the operation of chemical affinity, by what power would the carbonic acid that is formed be again given out by that fluid? No chemical agent either in the air or the water can be imagined equal to the re-attraction of it through the organized structure of the animal; nor is it conceivable, how the blood, by any power of its own, should be able to emit it, independent of such agent. And to suppose, that, by a power of chemical affinity, this gas should enter into the blood, and be afterwards expelled from it, as carbonic acid, by any method analogous to the ordinary animal excretions, is too inconsistent to be entertained for a single moment.

“ On the grounds, therefore, that the oxygen gas of the air does not obtain admission into the blood-vessels, either by the function of absorption, or by the operation of chemical affinity, we must reject the belief of its union with the supposed carbon of the blood, to form the carbonic acid that is produced. Still, however, the gradual disappearance of that gas, and the production of carbonic acid which ensues, justify the conclusion, that in the animal, as well as in the vegetable kingdom, they observe always a regular and progressive ratio, and are, in fact, proportional to each other, which admits of no other solution than that of their being converted into one another. To effect this conversion, however, no other substance but the animal was present, in these experiments, from which the carbon could be derived; consequently, the acid must be formed by the union of carbon furnished by the animal with the oxygen gas of the air, and this, too, exterior to the vascular structure of the animal.

“ Those who maintain, that the carbonic acid

is not directly formed by the union of the oxygen gas of the air with the animal carbon, but that it escapes ready formed from the animal system, ought to point out some other source from whence, in sufficient quantity, the oxygen gas can be derived: to tell us at the same time what becomes of the oxygenous portion of the air that actually disappears; and why the production of carbonic acid bears always so constant a proportion to the loss of this oxygen gas. To suppose with Spallanzani, that this acid is yielded by the process of digestion, because some snails which had been well fed furnished more of it than others which had suffered a long abstinence, is by no means proving the point; for a snail which had long fasted, yielded as much, in one instance, as those which had been recently fed, and, in the other examples, the starved snails fell short only in a small degree. Every animal function, also, is, *cæteris paribus*, carried on best in a state of health and vigour, which again depends altogether on a due supply of food: hence, therefore, the debility succeeding to abstinence must affect the organs of respiration, in common with the other organs, and consequently their power of acting so completely on the air. Whatever substances, moreover, are received into the animal system, suffer or produce some change: but to suppose, that carbonic acid should be first formed in the stomach, then taken up by the lacteal vessels, and carried through the mass of blood to be again thrown out by the respiratory function, simply as carbonic acid, is not only without proof, but against all probability. It is also to the quantity of air changed, and not to that of food taken in, that this acid bears a proportion; and, provided living action be equally well maintained, as much air seems to be re-

quired by an animal when he abstains from food as when he takes it, and as much carbonic acid to be produced. In as much, however, as a long abstinence from food debilitates the system, and affects the production of carbon, in so much will it diminish the quantity of carbonic acid, which the animal is accustomed to form.

“ But the quantity of this acid, when formed by the respiration of a given volume of air, does not seem to exert any noxious operation on the animal powers; for Spallanzani found, that animals placed in a given bulk of air did not live longer when the carbonic acid was abstracted by an alkaline solution as soon as formed, than when it was suffered to remain *; and, in all our experiments, where the carbonic acid was allowed to remain, the death of the animals seems to have arisen, not from the over-proportion of that acid, but from the diminished quantity, or total absence, of the oxygen gas. Since, indeed, air is necessary to the continuance of living action in all animals, and its nitrogenous portion appears to suffer no alteration, this necessity must arise from its containing oxygen gas, and from the requisite changes which, in respiration, that gas is made to undergo. When, therefore, the greater part, or the whole of the oxygen gas of the air is so changed, death ought to happen; and then accordingly, and not till then, does this event take place. It is therefore to the small proportion or total absence of oxygen gas, and not to the presence of carbonic acid formed out of that gas, that the cessation of the animal functions, in all the foregoing examples, is to be immediately ascribed.”

* *Memoirs on Respiration*, p. 317.

Chap. 4. Of the Changes induced on the Air by the Respiration of Birds, Quadrupeds, and Man.

When warm-blooded animals are made to respire, for a length of time, in a given portion of atmospheric air, no sensible diminution of its bulk is observed, provided the air is confined over mercury; but if water be employed for the purpose, a considerable loss of bulk is found to have taken place, which is accounted for by the production of carbonic acid, and its subsequent absorption by the water. Thus far the phenomena correspond with those which occur in vegetation and the respiration of the inferior animals.

Mr. E. next inquires into the source of those changes which air that has been repeatedly inspired is found to have undergone. He contends strenuously, and we think successfully, against the supposed entrance of any part of the inspired air into the bloodvessels of the lungs by the function of absorption, such a supposition being unsupported by anatomical fact; and he equally denies its attraction by the blood through the coats of those vessels, this being inconsistent with the acknowledged laws of chemical affinity. The opinion that air by any means gets admission into the bloodvessels, and there enters into new combinations, is, he thinks, highly improbable, from the acknowledged fact, that any elastic fluid being thrown into the bloodvessels quickly proves fatal. His own idea is, that the inspired air undergoes a decomposition in the lungs, and even in the bronchial cells of those organs.

Having shewn that, in the several processes of germination, vegetation, and respiration, the oxygenous portion of the atmosphere disappears, while carbonic acid is formed; and that the acid pro-

duced always bears a constant proportion to the oxygen gas lost; the author inquires, whence is this carbonic acid derived? "The reciprocal increase and diminution of these two gases (carbonic acid and oxygen gas) could spring only," he observes, "out of some necessary connection between them: and the variations occurring so regularly, and in such small quantities, are inconsistent with the supposition that the oxygen gas, which forms the carbonic acid of respiration, is derived from any other source than that of the inspired air. If there were any such source, why should not this acid be expired, in a quantity beyond what the residual air of the lungs will supply, when hydrogen gas is breathed; or why should it appear only when air containing oxygen gas is respired, and in proportion always to the disappearance of that gas? Why also should this acid be produced, and life for a time be sustained, when animals are confined in pure oxygen gas? and why should death speedily take place, and no acid be formed (beyond what the residual air of the lungs will supply), when they are placed wholly in nitrogen gas? These facts decisively shew, that the oxygen gas, which composes, in part, the carbonic acid formed in respiration, is derived from the inspired air alone; and that the production of this acid bears always a constant proportion to the loss of oxygen gas.

"But, to constitute this acid, carbon, its other ingredient, must be supplied, which, in the inferior animals, has been shewn necessarily to proceed from the animal system. In the foregoing experiments, also, where carbonic acid was formed when the animals were confined in jars of pure atmospheric air inverted over mercury, the animals must have furnished the carbon, since no

other substance was present which could afford it. This carbon is likewise given out by the blood of animals after it is withdrawn from the body, in a state capable of uniting with oxygen gas: and, it is generally admitted, that the animal fluids possess the same power of affording carbon, while retained in the living system; to the union of which substance, with the oxygen gas of the inspired air, the formation of the carbonic acid of respiration has been ascribed.

“ Concerning the manner, however, and the place in which the union of these two substances is brought about in the living body, opinions have greatly varied. By some, the carbon of the venal blood has been supposed to attract the oxygen gas of the air through the coats of the pulmonary cells and vessels, and by uniting with a portion of it, to form the carbonic acid, which is again returned immediately through the coats of these same vessels and cells. According to others, the oxygen gas enters into the blood-vessels, where it loosely combines with the blood in the capillaries of the lungs, and performs a circulation with it: during this circulation, a part of the oxygen unites with the carbon of the blood, so as to form an oxide of that substance, which, on the return of this fluid to the lungs in a venal state, is, by the acquisition of more oxygen, transformed into carbonic acid, and afterwards expelled through the coats of these same capillary vessels. Others, again, imagine the air to enter into the blood-vessels in its entire state, and to be dissolved and afterwards suffer decomposition during the circulation of that fluid: while these changes are going on, a part of the oxygen combines with the carbon of the blood, and forms carbonic acid, which is liberated through the

moist coats of the cells and vessels, when the blood returns to the lungs. In all these hypotheses, it is taken for granted, that the carbonic acid is in some way formed by the union of the carbon of the blood with the oxygen gas of the inspired air; and the chief difference arises from this union being held by some to take place only in the capillaries of the lungs, and by others through the whole course of the vascular system. But if, as we contend, no part of the inspired air gains admission into the blood-vessels of the lungs, neither of these opinions can be any longer maintained; for no oxygen gas can, on such grounds, be held to enter into the blood to unite with its carbon, neither could the acid, which it is supposed to form, be afterwards expelled from that fluid.

“The objection stated above, applies, however, in part only to the opinion of Mr. Abernethy, who considers the carbonic acid of respiration to be derived, not from the oxygenous part of the inspired air, but to be simply exhaled from the pulmonary vessels*. As this opinion rests on the belief that the quantity of oxygen gas that disappears in respiration is not sufficient to account for the bulk of carbonic acid produced, it can no longer be maintained, if it be shewn that the volume of that gas which is lost, actually exceeds that of the carbonic acid which is formed. Now, this has been amply done in the experiments already given: and, indeed, the excess of oxygen lost, was so apparent and so constant, as to lead Lavoisier, and others after him, to conclude, that it was employed to form a part of the water expelled from the lungs, by uniting with hydrogen supposed to reside in the blood, just as water and

* *Essays, Surgical, &c.* p. 146.

carbonic acid are formed by the combustion of wax and many other substances. It is, moreover, incumbent on those who hold this opinion concerning the production of carbonic acid, to find out some adequate source from whence the oxygen gas, forming the expired carbonic acid, can be derived; to explain to us, at the same time, what becomes of the inspired oxygen gas which actually disappears; and why the acid produced bears always so constant a proportion to the disappearance of that gas."

An argument has been drawn in favour of the supposed absorption of oxygen gas into the blood, from the volume of carbonic acid produced in respiration being less than the volume of oxygen gas taken in. The difference, however, in our author's opinion, is so small, as to be readily accounted for by the greater weight of the carbonic acid relative to its bulk; so that we may venture to conclude, he thinks, that the whole of the oxygen gas that disappears in respiration is expended in the formation of the carbonic acid. One difficulty strikes us as attending the explanation here offered; which is, that as the author does not allow the oxygen gas taken into the lungs to be so situated as to admit of a chemical attraction taking place between it and the contents of the bloodvessels, the carbon must be thrown off by exhalation from the lungs themselves; and, consequently, no office is assigned to the oxygen that appears at all adequate to its known importance in the process of respiration.

Contrary to the experiments of Mr. Davy, the author considers that the nitrogen is entirely passive in respiration, and in no measure absorbed.

Carbonic acid, also, he thinks, acts only by excluding oxygen, and not by any positive deleterious properties.—This conclusion appears to us to be very questionable.

Two other points are investigated in the succeeding chapters, viz. the source of the carbon in vegetables and animals, by which the changes in the air are effected; and the phenomena which arise from the changes induced on the air by the living functions of vegetables and animals. But our notice of these must be deferred to a future occasion.

ART. 35. *Plain Discourses on the Laws or Properties of Matter; containing the Elements or Principles of Modern Chemistry; with more particular Details of those practical Parts of the Science most interesting to Mankind, and connected with domestic Affairs.* By THOMAS EWELL, M.D. of Virginia, one of the Surgeons of the United States Navy. 8vo, 469 pages. New York, 1806.

THIS work, for an account of which we are indebted to that useful and interesting Journal, the *New York Medical Repository*, contains a number of original speculations, in which some of the prevailing doctrines in chemistry and natural philosophy are combated with much ingenuity and force of argument; of their truth we shall not venture to speak, leaving this to the consideration of the reader.

In its general arrangement, Dr. Ewell's Treatise does not differ materially from that of other modern systems. We shall confine our notice, therefore, to those passages in which the author

diffents from the prevailing doctrines, or in which he substitutes opinions of his own.

The opinion of Dr. Black concerning heat is opposed in the following manner :

“ Before dismissing the subject of heat, it will be proper to notice an opinion delivered by the great Dr. Black, which has, since his time, been published in all the systems of chemistry, as if its truth had been established. The doctor was the first who noticed the fact, that when substances were changed from the solid to the fluid, and from the fluid to the aeriform state, generally they absorbed sensible heat, or rendered it latent. Also, that when airs or fluids were rendered solid, they gave up sensible heat. Not satisfied with this important discovery, he and all the chemists since his time have stated, that the *cause of the solidity is the loss of heat* ; and that the *cause of the fluidity is the union with heat*. Hence he calls the latent heat *caloric of fluidity*. This appears to me, for several reasons, an erroneous doctrine, or rather assertion. An incidental circumstance, the absorption of heat, which must proceed from a capacity in the body *previously* acquired, is considered as the *cause* of the new properties of fluidity, &c. ! What must have given the body a capacity for heat ? And why may not the cause which gave the capacity, be the cause of the fluidity ? The doctor's opinion must appear erroneous from the facts, that the fluidity of bodies is not proportionate to the quantity of latent heat ; and that their solidity is not proportionate to the loss of heat. A few experiments will shew these truths. If on a piece of chalk you pour sulphuric acid, immense quantities of air will escape, although no absorption of heat or coldness will be produced.

If charcoal be burnt in pure air, great quantities of heat will be set free; yet the air formed during the combustion is as fluid as the air which disappeared. Nitric acid, in a strong heat, is converted into two airs of great bulk, which contain no more latent heat than the acid did. On adding salts to water, great quantities of heat are absorbed, yet the fluidity of the whole is not increased. When water is made solid by freezing, but little heat is extricated; yet, when it is made solid by an union with quick-lime, as in slacking lime, then much heat is extricated. When we bring two airs together, the ammoniacal and the muriatic, they form a solid, yet throw out no heat. These and other similar facts, justify the conclusion that solidity and fluidity do not, as Dr. Black supposes, depend on the quantities of latent heat.

“After considering this subject, I am decidedly of opinion, that the fluidity and solidity of substances depend on the same cause which varies their capacities for heat; and this is *the exercise of the particular affinities of the body, in the circumstances existing in the different degrees of heat.*”

“If this be admitted, we shall no longer be surprised at the above facts I have mentioned, nor at the following: that water, while freezing, has its bulk increased, although it parts with heat; and that iron, bismuth, and zinc, when melted, and some clays in strong heat, really contract in bulk. Nor should we be astonished at any of the effects which take place, as they all proceed from the exercise of the affinities of the bodies in the states created, the nature of which we can only learn by experience.”

The following remarks are offered concerning electricity:

“The same doctrine that was delivered con-

cerning heat and light, should be extended to electricity. We, therefore, must observe, that some bodies have a *capacity* to unite with it, and render it *latent*, from which state it may be converted into *sensible* electricity, by mechanical and chemical means. When converted in large quantities in the sensible state, it makes its escape so rapidly, as to occasion sometimes the loudest noise, or claps which every one has heard.

“ If the doctrine I have delivered concerning electricity be correct ; if it unite to bodies and become latent, as heat and light, chemical changes in substances would naturally produce alterations in the capacities of bodies for it, as well as in their capacities for heat and light. Accordingly this appears to be the case in some instances, although generally the escape of the fluid cannot be detected, as it flies off gradually. Lately it has been found, to the great astonishment of European chemists, that sulphur (which is electric, or contains a great quantity of electricity in a latent state), when melted with copper or iron in a Florence flask, from which all air is excluded, unites to the copper, and appears to burn. About the bottom of the mixture a sparkle appears which expands over the whole, giving it the appearance of blazing. This sparkling and blaze, no doubt, arise from the escape of the latent electricity of the sulphur, which is set at liberty on its chemical union with the metal. The sparkling of the water of the sea, of red-hot metals, and of some other bodies, very probably depends solely on the escape of this fluid. It also appears to me exceedingly probable, that the frequent and great collections of *sensible* electricity in the clouds, noticed during storms, arise from chemical changes in the air, whereby the capacity of the air to retain the latent substance

is lost. An union of the air with water, and with other substances, may, no doubt, produce the changes causing alterations in the capacity of the atmosphere for the latent electricity."

Dr. Ewell states a number of objections to the prevailing opinions concerning vegetation, and proposes to consider the subject in the following point of view :

"In the course of this work I have stated, and it will be believed by all who examine, that not only heat, light, electricity, and galvanism, create states in which the affinities of the particles of matter are variously exercised, but that *other bodies* have sometimes great influence in creating states for the exercise of the affinities of matter of a different kind. Hence you may put two compounds together of a particular kind, and no action will ensue unless water be added, which, when done, new affinities are exercised, and the water remains unchanged. A number of similar facts might be mentioned. The observation before made may be here repeated, namely, that although we cannot say in what a state for the exercise of the affinities of matter consists, yet it no doubt depends on a *mechanism*, or mechanical arrangement of matter which cannot be described. A variation in the mechanism of a body would naturally lead us to suspect that there would be a variation in those affinities of a compound which were exercised in the first state.

"Aware of these considerations, or principles, the changes occurring in vegetable juices can no longer be mysterious. Throughout every part of every plant there are pores, or vessels ; and in almost every part there is a difference in the mechanism or arrangement of these vessels. Inasmuch, therefore, as we find a difference in this

mechanism, should we be led to expect a difference in the affinities of the matter exercised. Accordingly we find that the compounds existing in the different parts of plants do vary as much as their mechanism or organization.

“ The theory then to explain the formation of vegetable substances seems very simple. A seed is placed in a soil ; it attracts substances from the earth ; these substances constituting its food, enter the pores or vessels of the seed ; in these pores, or in this state, their affinities are exercised ; in consequence of which they are converted into sap ; the different parts of the plant have a different mechanism, in consequence of which this sap assumes in one part properties different from those in another ; in one part its affinities are exercised, whereby it is converted into fibrous vessels possessed of irritability or a contractile power ; in another it is converted into mucilage ; in another into sugar ; in another into resin ; in another into an acid ; and so on of every juice found in plants. And thus a particle of matter may have its affinities exercised, and then itself be an agent, creating states in which the same affinities of other matter are exercised.

“ It should not from this be supposed, that all the parts of a plant are composed of the *same* elements ; although they are all formed from the sap, and on the same principles, viz. by the exercise of affinities regulated by a mechanism, or state created by some intervening body. This would be incorrect, as we find, on analyzing some parts, their elements differ in proportions very considerably. If we can conceive of the different exercise of the affinities of particles of matter in different states, we can conceive that when the sap passes through certain vessels, most of one or two of its elements

may go unchanged, while its other elements are altered: for example, we can conceive of the hydrogen and carbon of the sap uniting in one part to form oil; and the remaining constituents of the sap passing unchanged for other purposes; in another part, the oxygen is retained in a small quantity, so as to form a *sugar* with the hydrogen and carbon; in another part the oxygen is retained in such quantities as to form an acid; and so of all the rest of vegetable substances.

“No doubt light has considerable influence in creating states for the exercise of the affinities of the sap in the upper parts of the plant. In the ripening of fruit, its influence is remarked by every one. This ripening of fruit, by which acid and acrid juices are converted into such as are sweet and mild, tends very much to establish the explanation of vegetation, which I have ventured to offer. The conversion of sour fruit when baked into a sweet mass has the same tendency. In each of these cases, the changes must unquestionably arise from the different exercise of chemical laws in different states. Surely in an apple, a water-melon, or a strawberry, there are no little vessels which can make sugar by a *peculiar action*.”

ART. 36. *Report and Address, delivered by the President, to the Medical Society of the County of New York; together with the Charter of the College of Physicians and Surgeons in the City of New York. Published by Order of the Society.* 8vo, 22 pages. New York. 1807.

THE account here given of the incorporation of Medical Societies throughout the State of New York, and the establishment of a College of Physicians and Surgeons in the city of New York, as

recently enacted by the Legislature of the State, is highly deserving the attention of those who have lately been attempting to bring about some useful regulations in the study and practice of physic in this country. The charter, it will be seen, has been drawn as favourable to the profession as could reasonably have been expected, while it evinces a due regard to the just rights of every individual. It forms, indeed, a striking contrast with the charter of the London College, or rather, we should say, with the mode in which that charter has been, and still is, executed (for it is very clear that the intentions of the Legislature, in granting the charter, have been grossly violated and abused).—In order to avoid confusion, and to render the following account clear and intelligible, it is necessary to premise, that the *State of New York* contains thirty-five counties, one of which is called the *county* of New York, including a district adjoining to the city of the same name. The Legislature of the State holds its sittings at the city of Albany.

In the year 1806, an act was passed by the Legislature of the *State of New York* “for incorporating Medical Societies, for the purpose of Regulating the Practice of Physic and Surgery” within the state. By this law, physicians and surgeons, in any number not less than five, are authorized to incorporate themselves by counties, with power to examine students, and to grant licences to practise. Each county society may hold estate to the amount of one thousand dollars. It is provided in the statute, that a *Central Society* shall be formed, by a meeting of delegates, one from each county society, to hold their meetings annually at Albany. Fifteen of these dele-

gates constitute a quorum for business. In many of the counties these medical societies have been already formed, and their representatives to the central society have been chosen. In the beginning of the present year the central society, or medical society of the state, held its first meeting; the society was duly organized, twenty-two delegates attending, and certain bye-laws were enacted. They agreed to petition the legislature to pass an act to divide the members of the society into classes, and to make some provision for the support of the society; and they examined and licensed some candidates to practise physic and surgery.

The Medical Society of the *County* of New York supposed they could not express their gratitude to the legislature in a more dignified manner, than by a liberal and just exercise of the powers with which they were invested by law. They received, as members of the society, *all Physicians and Surgeons* resident in the county, and authorized by the former laws to exercise their several professions; they appointed a respectable committee to confer with trustees of colleges respecting the best means of promoting medical education; and they divided themselves into classes, to promote in a special manner certain specific parts of medical science.

In the hopes of continuing more secure in the possession of the exclusive rights and privileges with which they were invested at the time of their incorporation, and the better to promote and cherish the science of medicine under the patronage of the state, and to see those duly educated in a knowledge of the healing art, who, in the course

of nature, might be destined to supply their places, they petitioned the legislature to incorporate the society into a college of physicians and surgeons in the city of New York. This measure, however, being opposed by certain practitioners of physic residing in the city of New York, the idea of applying to the legislature was abandoned, and an application for the same purpose was made instead to the regents of the university of the *state*, who, in the year 1791, had been invested with such a power by the legislature. The application was most favourably received, and, after due enquiry, a charter was granted, by unanimous consent, of the following tenour.

The preamble, after stating the petition to be in behalf of *all the members of the medical society* of the county of New York, and admitting its justice, goes on to enact as follows :

“ Be it therefore ordained by us, by virtue of the act entitled, ‘an act to enable the regents of the university to establish a college of physicians and surgeons within this state,’ passed the 24th day of March, 1791, and we do by these presents, ordain, grant, and declare, that *a college of physicians and surgeons, for the promotion of medical science, and diffusing the knowledge of the healing art*, shall be, and is, hereby established in the city of New York, in this state, and that Sir James Jay [with a great number of others, particularly named], *and all others who are now members of the medical society of the county of New York, and all physicians and surgeons now resident in the county of New York, and authorized by law to practise in their several professions*, shall be the present trustees or members of the said college; and that the said trustees or members and their

successors, shall be a body corporate and politic in fact, and in name, by the name of 'THE COLLEGE OF PHYSICIANS AND SURGEONS IN THE CITY OF NEW YORK,' and shall have perpetual succession, and by that name shall be in law capable to sue and be sued, to plead and be impleaded, to answer and be answered unto, to defend and be defended in all courts and places, and in all matters and causes whatsoever, and to purchase, take, hold, enjoy and have, lands, messuages, tenements, hereditaments, and real estate, in fee simple, or for term of years, or lives, or in any other manner whatsoever, and also goods, chattels, books, monies, and all other things of what nature soever; *Provided always*, that such estate, as well real as personal, which the said college is hereby authorized to hold, shall not exceed the sum of one hundred and fifty thousand dollars, current money of this state, and that the trustees or members of said college shall and may have a common seal, and may alter and renew the same at their pleasure.

" *And it is hereby further ordained, granted, and declared*, that the trustees or members of the college of physicians and surgeons hereby established, shall and may meet together on the first Tuesday in May next, at twelve o'clock of that day, in the City-Hall of the city of New York, or at such other hour and place as may be directed by the Chancellor of the University, and shall then elect by ballot a president, vice-president, register, treasurer, and thirteen censors, who shall hold their respective offices for one year, and until others shall be chosen in their places; and the first Tuesday in May shall be for ever after the day for the anniversary meeting of said college of physicians and surgeons, and on which day the president and

other officers before enumerated shall be elected as aforefaid; and their quarterly meetings shall be on the first Tuesday in August, November, and February, in every year; and that on the days of their anniversary meeting, and at their quarterly meetings, but at no other time, they the said trustees or members may enact such bye-laws, rules, and regulations, relative to the affairs, concerns, and property of said college, and relative to the duties of their president, vice-president, register, treasurer, censors, and other members, as they or a majority of the members of such annual or quarterly meetings may think fit and proper; *Provided* such bye-laws, rules, and regulations, be not contrary to, or inconsistent with, the constitutions and laws of this State, or the United States, or the ordinances made by us or our successors, Regents of the University of this state. And the register of the said college shall provide a book, in which he shall make an entry of all the resolutions and proceedings which may be had from time to time, and also the annual reports relative to the state of the treasury, and all such other things as a *majority of the members of the college shall think proper, to which any member of the college may at any time have recourse*; and the same, together with all books, papers, and records, which may be in the hands of the register, and be the property of the college, shall be delivered to his successor in office. And the treasurer of the said college shall receive and be accountable for all monies which shall come into his hands, and shall pay the same in such manner as may be directed by a majority of the members of said college, convened at the anniversary or quarterly meetings, and by a warrant for that purpose, signed by the president or vice-president.

“ *And it is hereby further ordained and declared,* that in case it should at any time happen that an election of the said officers should not be made on the day when, pursuant to this ordinance, it ought to have been done, the said corporation shall not for that cause be deemed to be dissolved, but it shall be lawful on any other day within three months thereafter to hold and make an election for the said officers, in such manner as shall have been regulated by the bye-laws of the said corporation.

“ *And it is hereby further ordained, granted, and declared by us,* that the said college of physicians and surgeons shall, as far as they are able, at all times provide suitable apartments for all such professors as shall hereafter be nominated and appointed by us in and for said college, and which professors shall have the style and title of ‘ Professors of the University of the State of New York, for the College of Physicians and Surgeons;’ and that all the members of said college shall be privileged from time to time and at all times to attend, inspect, and notice, all lectures or other mode of teaching by the professors in said college appointed by us; and that in case of death or resignation of any professor or other vacancy in said college, a majority of the trustees or members of said college at any of their meetings may appoint lecturers in any branch of medicine or of the sciences connected therewith, until such time as our pleasure be known respecting the same, or professors be appointed by us—and that it shall and may be lawful at all times for them the said trustees or members to appoint lecturers in said college in any branch of science for themselves and for their own instruction.

“ *And it is hereby further ordained, granted, and declared,* that the president, vice-president,

censors, and all others, the trustees or members of said college, shall carry and put into full effect all our ordinances respecting the said college, as well with respect to education as all other matters and things, and shall pay due attention towards establishing and preserving for the said college an anatomical museum and chemical laboratory and botanic garden, and shall make an annual report to us in writing, or to the chancellor of the university, in the month of January in every year, respecting the funds and property of the said college, and all matters and things relative to said college and the students and professors thereof.

And it is further ordained, granted, and declared, that twenty-one trustees or members of the said college may form a board to do business at any of the anniversary, quarterly, or extraordinary meetings; and that the president, or in his absence the vice-president, of said college shall appoint and direct a special or extraordinary meeting to be called of the trustees or members of said college at any time or place he may think proper, provided application be made to him in writing for that purpose, signed by thirteen trustees or members, and the said meeting be previously advertised for six days in two of the newspapers printed in the city of New York; and that at all meetings of the college, in the absence of the president or vice-president, the senior censor on the list of the college then present shall preside, and that the trustees or members of said college may at any of their anniversary, quarterly, or extraordinary meetings adjourn from day to day.

And it is further ordained, granted, and declared, that the president, vice-president, trustees, or members of said college may at any time and at all times recommend to us any person residing in

the county of New York, and lawfully authorised to practise physic and surgery, or any physician or surgeon or person eminent for learning and talents to be a trustee or member of said college of physicians and surgeons; *and any physician and surgeon resident for two years in the county of New York, being of good moral character and authorised by law to practise in his profession,* may apply to us to be nominated and appointed a trustee or member of said college, and that the said college may direct that the president of the said college grant appropriate diplomas under the hand of the president and seal of said college testified by the register, certifying the name of every such trustee or member of the college.

“ *And be it further ordained and declared,* that reserving to ourselves and our successors, regents of the university of this state, all powers to appoint professors in said college, and also all powers to appoint and displace any trustee or member of said college now nominated and appointed by this charter, or hereafter to be appointed by us or our successors, and also reserving all powers to confer degrees on any member or trustee or student of said college, which in our opinion and in the opinion of the president and other trustees and members of said college, may be worthy of any literary mark of distinction, in such manner as may be directed by us, and also reserving to ourselves and our successors the right of appointing fellows and honorary members for said college, and also of making such further grants or ordinances as we and our successors may find necessary and useful for said college, and also reserving to ourselves and our successors the right to alter and modify this ordinance, establishing the said college, whenever we or our successors shall deem it necessary or expedient.

“ We do finally ordain, grant, and declare, That the said trustees and members of the College of Physicians and Surgeons, in the City of New York, and their successors for ever, shall enjoy all the corporate Rights, Privileges, and Immunities which are hereby granted.

In testimony whereof we have caused our common seal to be affixed to these presents, the twelfth day of March, in the thirty-first year of the Independence of the United States, and of our Lord, one thousand eight hundred and seven.

[L. S. A.] MORGAN LEWIS.

By Command of the Chancellor,

FR. BLOODGOOD, Secretary.”

It will readily be allowed, that the enactments of this Charter are stamped with great liberality, and such as are adapted to a liberal and enlightened age. Its sole object is stated to be, ‘the promotion of medical science, and the diffusion of the knowledge of the healing art.’ It is not an exclusive corporation, for the benefit of a few individuals possessed of no superior medical education or acquirements, but confers its privileges equally on ‘all practitioners authorized by law to practise in their several professions.’ Its honours and offices are open to the body at large, and conferred by a majority of their suffrages. Its proceedings are equally open to all its members, and its records easy of access. Provision is made for instruction, by lectures and the formation of a library and museum, and for the bestowing of public honours upon meritorious individuals. These are noble purposes, which doubtless were had in view at the establishment of similar institutions on this side of the Atlantic, but which seem to have been almost totally lost sight of.

The symptoms generally comprehended by the term melancholia are taciturnity, a thoughtful pensive air, gloomy suspicions, and a love of solitude. Those traits, indeed, appear to distinguish the characters of some men otherwise in good health, and frequently in prosperous circumstances. Nothing, however, can be more hideous than the figure of a melancholic, brooding over his imaginary misfortunes. If moreover possessed of power, and endowed with a perverse disposition and a sanguinary heart, the image is rendered still more repulsive. Tiberius and Louis XI are singular instances of this unhappy temperament. Gloomy taciturnity, austere moroseness and gravity, the inequalities of a mind abounding with acrimony and passion, love of solitude, and the timid embarrassment of an artful disposition, betrayed, from early youth, the melancholic temperament of Louis. Between the character of this prince and that of Tiberius, there are several striking traits of resemblance. Neither of them distinguished himself in war, excepting during the effervescence of youth. Imposing but ineffectual preparations, studied delays, illusive projects of military expeditions, and negotiations conducted on the principles of intrigue and perfidiousness, distinguished their future lives. Before the commencement of their respective reigns, they passed several years in inglorious banishment, amidst the languors of private life; the one in the Isle of Rhodes, and the other in a retired province of Belgium. The profound dissimulation, the characteristic indecision, and equivocal answers of Tiberius upon his succession to the throne of Augustus are well known. Louis, throughout the whole of his life, was in like manner a model of the most refined and perfidious policy. Each of them

aprey to dark suspicions, sinister prognostications, and terrors ever new and imaginary, which increased with their advancing lives, they at length sought retirement from the effects of their tyranny; the one, in the château de Pleffis-les-Tours; and the other, in the Island of Capræ, on the coast of Campania, where they respectively buried themselves in unmanly and unlawful pleasures. The biography of persons of distinguished talents and reputation affords many instances of melancholics of a very opposite character, who were remarkable for their ardent enthusiasm, sublime conceptions, and other great and magnanimous qualities. Others occupying a less exalted station, charm society by the ardour of their affections, and give energy to its movements by their own impassioned turbulence and restlessness. Melancholics of this class are remarkably skilful in tormenting themselves and their neighbours, by imagining offences which were never intended, and indulging in groundless suspicions. It is very common for physicians to be consulted by persons of this temperament for nervous palpitations or aneurism of the heart. Some fancy themselves under the influence of hydrophobic madness. Others believe that they have all the diseases which they read of in medical books. I have known many who had had the venereal disease, torment themselves, upon the appearance of the least indisposition, with the belief that the virus of syphilis was still operating; and they have gone for advice to every empiric that flattered their credulity.'

The second species of Mental Derangement laid down by M. Pinel, is *Mania without Delirium*. Our author conceives, contrary to the opinion of Mr. Locke and most other writers, that mania

often exists without any lesion of the understanding, manifesting itself solely by acts of violence and fury. According to this, every irascible man is a maniac in a greater or less degree; verifying the adage, *ira furor brevis*. But the propriety of this may, we think, be justly questioned. The instances adduced by the author in support of his opinion only seem to prove that very irascible people are prone to insanity.

The third species is *Mania with Delirium*. This is the form of insanity to which other writers have given the name of mania simply. It may be either continued, or intermittent, recurring by paroxysms. It is characterized by strong excitement, both in respect to the functions of the mind and of the body. From this, the author is of opinion that it is in general a *nervous malady*, that is, we suppose, does not depend upon organic affection of the brain. But in a great number of instances dissection has proved the contrary; and with regard to the rest, it is extremely easy to conceive, that there may exist changes in the organization of the brain sufficient to disorder all its functions, without any *visible* lesion of structure.

The fourth species of mental derangement is *Dementia, or Abolition of the thinking Faculty*. This species of insanity is manifested by a rapid succession or uninterrupted alternation of insulated ideas, and evanescent and unconnected emotions; by continually repeated acts of extravagance, complete forgetfulness of every previous state, diminished sensibility to external impressions, abolition of the faculty of judging, and perpetual activity. It is well characterized in the following instance.

‘ In order to mark, with the greater precision, the characteristic properties of dementia, it will be of advantage to consider them in contrast with those of mania. In mania, there are important lesions of the powers of perception, imagination, and memory: but the faculty of judgment and the association of ideas remain. The maniac, who believed himself to be the prophet Mahomet, and blended this idea with every action and every thought, retained his faculty of judging; but he combined two discordant ideas: therefore his judgment was unsound. In this point of view, what would become of the greatest part of the world, if every act of erroneous judgment entitled the judge to an apartment in the *Petites Maisons*? In dementia, there is no judgment either true or false. The ideas appear to be insulated, and to rise one after the other without connection, the faculty of association being destroyed. An example will illustrate my position. It is that of a person whom I had frequently the opportunity of seeing. His motions, his ideas, his broken sentences, his confused and momentary glimpses of mental affection, appeared to present a perfect image of chaos. He came up to me, looked at me, and overwhelmed me with a torrent of words, without order or connection. In a moment he turned to another person, whom in his turn he deafened with his unmeaning babble, or threatened with an evanescent look of anger: but, as incapable of determined and continued excitement of the feelings as of a just connection of ideas, his emotions were the effects of a momentary effervescence, which was immediately succeeded by a calm. If he went into a room, he quickly displaced or overturned the furniture, without manifesting any direct intention. Scarcely could one look off,

before he would be at a considerable distance, exercising his versatile mobility in some other way. He was quiet only when food was presented to him. He rested, even at nights, but for a few moments.

The last species of insanity described is *Idiotism, or Obliteration of the intellectual Faculties and Affections*. This, though made a distinct species, can hardly, we imagine, be otherwise considered than as differing in degree from the former: and there are certainly all the intermediate gradations.

This species of mental disorganization is said by the author to be the most frequent in hospitals, and to be for the most part incurable. But it is rather because it is incurable, that it is so frequently met with in hospitals; and its frequency in such situations can scarcely be admitted as a proof of the comparative frequency of its occurrence in relation to other species of insanity. The most singular fact in the history of idiotism, is that, in many instances, especially in young people, after the patient has remained for several months or years in a state of absolute mental imbecility, he is attacked by a paroxysm of active mania, of twenty, twenty-five, or thirty days continuance, which is often succeeded by a return of perfect rationality.

Insanity does not always preserve the same character throughout the whole of life. The different species are mutually interchangeable. Thus melancholia, the author says, is not unfrequently exasperated into mania, while mania is depressed into idiotism: and this, in its turn, may be exalted into mania, sometimes as a first step towards the recovery of reason. This clearly shews that the disease, in all these cases, is essentially one and the

same; and the attempt to arrange them nosologically appears as futile as all the other attempts at methodical nosology founded upon external characters. The distinctions pointed out, however, may be of use in regard to the moral treatment of lunatics, and contribute towards the establishment of proper rules for the internal government of lunatic asylums; which appears to have been the author's chief view in making them.

The proportion between the different species of mental derangement in respect to numbers, appears deserving of notice. Out of two hundred patients confined at the *Bicetre*, there were twenty-seven melancholics, fifteen maniacs without delirium, eighty maniacs with delirium including both the continued and intermittent varieties, eighteen affected with dementia, and sixty idiots.

In the following section, M. *Pinel* points out the importance of an enlightened system of police for the management of insane persons, and the advantages of a systematic distribution, and a perfect insulation, of the different species of mental derangement. We deem this by far the most useful part of the work, though perhaps the least professional. Those who are engaged in the management of lunatic establishments, would do well to attend to the suggestions it affords.

The temples dedicated to Saturn, among the ancient Egyptians, with the numerous striking ceremonies practised by the priesthood, are considered by our author as wise regulations, intended and calculated to interrupt the chain of fixed and gloomy ideas in melancholics by powerful and continued impressions on their external senses. If this

be true, certainly efforts of industry and art; scenes of magnificence and grandeur; the varied pleasures of sense; and the imposing influences of a pompous and mysterious superstition, were never devoted to a more laudable purpose.

‘At both extremities of ancient Egypt, a country which was at that time exceedingly populous and flourishing, were temples dedicated to Saturn, whither melancholics resorted in crowds in quest of relief. The priests taking advantage of their credulous confidence, ascribed to miraculous powers the effects of natural means exclusively. Games and recreations of all kinds were instituted in these temples. Voluptuous paintings and images were every where exposed to public view. The most enchanting songs, and sounds the most melodious, “took prisoner, the captive sense.” Flowery gardens and groves, disposed with taste and art, invited them to refreshing and salubrious exercise. Gaily decorated boats sometimes transported them to breathe, amidst rural concerts, the purer breezes of the Nile. Sometimes they were conveyed to its verdant isles, where, under the symbols of some guardian deity, new and ingeniously contrived entertainments were prepared for their reception. Every moment was devoted to some pleasurable occupation, or rather to a system of diversified amusements, enhanced and sanctioned by superstition. An appropriate and scrupulously observed regimen; repeated excursions to the holy places; preconcerted fêtes at different stages to excite and keep up their interest on the road, with every other advantage of a similar nature, that the experienced priesthood could invent or command, were, in no small degree, calculated to suspend the influence of pain, to calm the inquietudes of a morbid mind, and to operate

salutary changes in the various functions of the system*. Those ancient establishments, so worthy of admiration, but so opposite to the institutions of modern times, point out the objects to be aimed at in every asylum, public or private, for the reception of melancholics.'

Amongst the moral and physical means contributing to the recovery and convalescence of maniacs, the author strongly insists upon bodily exercises, including laborious occupations. 'Convalescent maniacs,' he observes, 'when, amidst the languors of an inactive life, a stimulus is offered to their natural propensity to motion and exercise, are active, diligent, and methodical. Laborious or amusing occupations arrest their delirious wanderings, prevent the determination of blood to the head by rendering the circulation more uniform, and induce tranquil and refreshing sleep. I was one day deafened by the tumultuous cries and riotous behaviour of a maniac. Employment of a rural nature, such as I knew would meet his taste, was procured for him. From that time I never observed any confusion nor extravagance in his ideas. It was pleasing to observe the silence and tranquillity which prevailed in the Asylum de Bicetre, when nearly all the patients were supplied by the tradesmen of Paris with employments which fixed their attention, and allured them to exertion by the prospect of a trifling gain. To perpetuate those advantages, and to ameliorate the condition of the patients, I made, at that time, every exertion in my power to obtain from the government an adjacent piece of ground, the cultivation of

* See an excellent work by the same author, entitled *Nosographie Philosophique*. Tom. ii, page 28.

which might employ the convalescent maniacs, and conduce to the re-establishment of their health. The disturbances which agitated the country in the second and third years of the republic, prevented the accomplishment of my wishes, and I was obliged to content myself with the subsidiary means which had been previously adopted by the governor; that of choosing the servants from among the convalescents. The same method is still continued at the mad-house at Amsterdam. The accomplishment of this scheme would be most effectually obtained by combining with every lunatic asylum the advantages of an extensive enclosure, to be converted into a sort of farm, which might be cultivated at the expense of the patients, and the profits of which might be devoted to their support. A principal hospital of Spain presents in this respect an excellent example for our imitation. The maniacs, capable of working, are distributed every morning into separate parties. An overlooker is appointed for each class, who apportions to them all, individually, their respective employments, directs their exertions, and watches over their conduct. The whole day is thus occupied in salutary and refreshing exercises, which are interrupted only by short intervals of rest and relaxation. The fatigues of the day prepare the labourers for sleep and repose during the night. Hence it happens, that those whose condition does not place them above the necessity of submission to toil and labour, are almost always cured; whilst the grandee, who would think himself degraded by any exercises of this description, is generally incurable.

The Spanish hospital above alluded to, in which the good effects of laborious occupations have been so fully experienced, is situated at Saragossa,

a city of Spain, where there is an asylum, which is open to the diseased, and especially to lunatics of all nations, governments, and religions, with this simple inscription, URBIS ET ORBIS. Manual labour has not been the sole object of solicitude on the part of its founders. They have, likewise, sought an antidote to the wanderings of the diseased imagination in the charms of agriculture, a taste for which is so general, that it is commonly considered as an instinctive principle of the human breast. In the morning may be seen the numerous tenants of that great institution, distributed into different classes and awarded their respective employments. Some are kept in the house as domestics of various orders and provinces; others work at different trades in shops provided for the purpose. The greatest number set out, in different divisions, under the guidance of intelligent overlookers, spread themselves over the extensive inclosure belonging to the hospital, and engage, with a degree of emulation, in the soothing and delightful pursuits of agriculture and horticulture. Having spent the day in preparing the ground for seed, propping or otherwise nursing the rising crop, or gathering the fruits of the olive, the harvest or the vintage according to the season, they return in the evening calm and contented, and pass the night in solitary tranquillity and sleep. Experience has uniformly attested the superiority of this method of managing the insane. The Spanish noblesse, on the contrary, whose pride of birth and family presents unfurmoutable obstacles to a degradation so blessed and salutary, seldom recover the full and healthy possession of a deranged or lost intellect.

The following is an outline of the general police

and daily distribution of service, at the hospital under the charge of the author. 'The natural propensity of maniacs to indulge in passionate emotions, to murmur at trifling inconveniences, and to represent circumstances which they fancy in any degree objectionable in colours the most unfavourable and exaggerated, must render necessary the strictest discipline and order, in every department of their management. Hence the measures for securing order and regularity in the services of the institution, which were adopted at the Asylum de Bicetre, during my professional attendance upon it. The different rooms were opened in the morning at five o'clock in the summer, at half past seven in the winter, and between those hours in the intermediate seasons. Great attention was paid to the cleaning out of the chamber utensils, as well as the rooms and courts. To assure himself that nothing had been omitted or neglected, the governor paid a forenoon visit to all the rooms. Breakfast was served soon after the hour of getting up. The hour of dinner was eleven o'clock precisely. The rooms were set in order, and examined in respect to cleanliness after every meal. The third, and last portion of bread, was distributed with broth, or some other mess, at four or five o'clock in the afternoon, according to the season. The patients' apartments were shut up for the night at a given hour, when the bell was rung. To allay the fury of the raving, to administer to the wants of the needy, and to prevent the accidents to which a house of that description was peculiarly exposed, a watchman was commissioned to go round the hospital every half hour till midnight. From twelve o'clock till morning, another keeper fulfilled the same duty. In the morning, the ser-

vants entered again upon their respective duties. Their industry was a condition of their service; and, in order to be able to put an end speedily to any tumult or confusion that might happen, their presence at all hours of the day was indispensably exacted. The servants were under special injunction not to lay violent hands on a maniac, even in their own defence. A system of tactics, carried on by signs, was adopted, in order to secure the momentary seizure and effectual arrest of the raving and furious madman. In a word, the general government of the hospital resembled the superintendence of a great family, consisting of turbulent individuals, whose fury it should be more the object to repress than to exasperate, to govern by wisdom rather than to subdue by terror.

The medical treatment of insanity seems to have engaged very little of our author's attention; or rather, we should say, is considered by him as of very secondary importance. He attaches but little credit to pharmaceutic preparations; and all-sufficiency, in cases that are curable, to physical and moral regimen. Some of the most active remedies, particularly bloodletting, he disapproves of, as general means of cure, and charges the latter, indeed, with rendering incurable many cases that would otherwise have terminated favourably. In short, instead of devoting his pages to the consideration of drugs and medicaments, M. Pinel's object has been to investigate the history of mental derangement; to discriminate accurately between the different species of the disease, so as to avoid fortuitous and ineffective treatment; to furnish precise rules for the internal police and government of charitable establishments and asylums; to urge the necessity of providing for the

insulation of the different classes of insane patients at houses intended for their confinement; and to place first, in point of consequence, the duties of a humane and enlightened superintendency, and the maintenance of order in the service of hospitals.

We shall only touch upon one other point here discussed, as being of importance to practitioners in general, namely, the means of distinguishing between real and feigned mania, a matter often of some difficulty, but which will be lessened by the observations here made.

‘Mania,’ M. *Pinel* remarks, ‘as well as demoniacal possession, epilepsy, catalepsy, and other nervous disorders, may be counterfeited, either from views of interest or from worse motives. To distinguish between the dexterous imitations and the real disorder, is a province of medical jurisprudence, equally delicate, difficult, and important. I do not here speak of unskilful pretensions and rude artifices calculated to impose only on simple and credulous people, such as Wierus quotes*; but of insanity counterfeited on a great scale, and amidst enlightened characters, as in the example quoted by Dehäen† of a woman, who, in consequence of attestations given in her favour by certain well informed ecclesiastics, passed for a demoniac, and who after her admission into the hospital of Vienna was convicted of imposture. A guilty prisoner sometimes counterfeits insanity in order to escape the vengeance of the law, preferring confinement in a lunatic hospital to the punishment due to his crime. At other times

“ * *Historia festiva figmenti sœminæ demoniacæ Wieri*, Op. Med. p. 344.

“ † Dehaen *Meth. Med.* tom. 15.

genuine insanity supervenes in the course of a long and involuntary detention in a place of confinement. Those are cases which it is the important province of the physician to distinguish and to ascertain.

‘A man, forty-five years of age, confined in the felon department of Bicetre, on account of his political opinions, was guilty of numerous acts of extravagance, made many absurd speeches, and at length succeeded in obtaining his removal to the lunatic department of the same place. This happened before my appointment. In the course of some months after my entrance upon the functions of my office, I determined to examine carefully into the history and state of his malady, in order to ascertain accurately the class of the disorder to which his case belonged. For this purpose I frequently visited his chambers. At every visit he exhibited some new antic. Sometimes he wrapped up his head in cloths or blankets, and refused to reply to my questions. At other times he poured forth a torrent of unmeaning and incoherent jargon. On other occasions he assumed the tone of an inspired or affected the airs of a great personage. The assumption of so many and opposite characters, convinced me that he was not well read in the history of insanity; and that he had not studied the characters of those whom he endeavoured to counterfeit. The usual changes in the expression of the eyes and other features, characteristic of a nervous maniacal excitement, were likewise wanting. I sometimes listened at the door of his chamber in the course of the night, when I invariably found him asleep, which agreed with the report of the hospital watchman. He one day escaped from his chamber while it was cleaning and setting in order, took up a stick, and

applied it, with great effect, to the back of a domestic, in order to impress him and others with the idea of his violence and his fury. All these facts, which I collected and compared in the course of one month, appeared to characterise no decided variety of mania, but rather a great desire of counterfeiting it. I was no longer the dupe of his artifices; but as he had been sentenced to be confined on account of political matters, I adjourned my report of him, under pretence of wishing to learn some new facts. The 9th of Thermidor (July 28) succeeding put an end to the prosecution which had been commenced against him.

‘ In Vendémiaire, (Sep. and Oct.) of the year 3, a young man, of twenty-two years of age, confined in the prisons of Bicetre, was brought to the infirmary of the same establishment. He was exceedingly dejected and silent during my first visit to him. As I found him free from fever, I merely prescribed a light diet, persuaded that his disorder consisted in great depression and distress of mind. On the succeeding days I observed but little change in the state of his symptoms. He still persisted in his silence, even when questions were put to him. He sometimes sighed deeply, and moaned piteously. He had little appetite, no sleep, and, according to the report of the attendants, was subject in the night to nervous agitations of extreme violence. He frequently got out of bed, walked about the ward, and was obliged to be re-conducted to his couch, as if out of his mind. Two months after his admission into the infirmary, and during one of my visits, he advanced with an air of wildness, and forcibly seized one of the attendants with the intention apparently of throwing him down. His looks

were wild and fixed. He wished to be informed relative to some particulars connected with a certain female of his acquaintance. He sighed profoundly. Such was the sensibility of his epigastric region, that he could scarcely bear the weight of his bed-clothes. Being desired to ascertain the nature of his disorder, I felt no hesitation in pronouncing his state to be that of decided insanity, consequent either upon disappointed love, or upon the depression of mind occasioned by his confinement, or, perhaps, upon the united influence of those two causes. His conveyance to a lunatic asylum was, at length, decided upon, and all judicial proceedings against him were withdrawn.

‘It may be thought astonishing, that in an object of so much importance as that of ascertaining the actual existence of mental derangement, there is yet no definite rule to guide us in so delicate an examination. In fact, there appears no other method than what is adopted in other departments of natural history: that of ascertaining whether the facts which are observed belong to any one of the established varieties of mental derangement, or to any of its complications with other disorders. I could here quote several examples of complicated mania illustrative of my position. I shall confine myself to one, that of a young woman, twenty-eight years of age, with white hair, and little expression in her countenance. Her state of derangement, it is supposed, originally depended upon a fright which her mother received during her pregnancy. She remained like a statue, constantly in the same place. She could not speak, notwithstanding that her organs of speech appeared perfect in their conformation. It was with great difficulty that she was taught to

enunciate the vowels e, o. Of affections she appeared not to possess any; a circumstance that might have disposed a nosologist to refer her case to the species ideotism. But there were two or three acts that she could perform, which appeared to indicate that her ideotism was not complete. She was subject almost every morning to a paroxysm of great fury. If any one attempted to confine her in the strait-waistcoat, she was violently enraged, and could use her teeth and nails with great violence and effect: but as soon as she was actually seized, her paroxysm ceased, she submitted without further resistance, and shewed every sign of repentance. Does not this case, at least in its paroxysms, present the character of mania without delirium?

ART. 39. SAMUELIS THOMÆ SOEMMERING
Icones Oculi Humani. Folio, 94 pages, with
eight plates. Frankfort, 1804. Imported by
T. Boosey, London. Price 4l 4s.

TO those who are acquainted with the former labours of this accurate and indefatigable anatomist, it would be superfluous to speak of the present in terms of commendation: it will be quite sufficient that we point out its general nature and objects. The figures and descriptions are taken from drawings, made either by the author himself, or under his immediate inspection, the greatest attention being paid to minute and faithful representation. The work is not only useful as facilitating anatomical demonstrations, but as leading to a more perfect knowledge of the functions of that important organ, the eye, and a more successful treatment of its diseases.

The plates, which are eight in number, contain each a great number of figures, most of which are exhibited both in outline and in shadow; for the author labours not only for professional readers, but for those who pursue anatomy as a branch of natural philosophy, or as contributing to the improvement and perfection of the polite arts. For this reason, in his use of terms he has adhered scrupulously to such as common use has sanctioned, though they may not always have been the most correct or expressive. The following are the general contents of the different plates.

The first exhibits the external appearance of a well formed eye, open; as an object of comparison for shewing the varieties arising from sex, climate, and other circumstances.

In the second plate, the eyelids are closed; which gives an opportunity of shewing their form and extent, their muscles, arteries, and veins. In this are displayed also, in different figures, the various parts appertaining to the eyelids, or at least which agree with them in office; such as the supercilia, cilia, glands, membranes, and the apparatus of the lacrymal organs.

Plate 3. The common orbicular muscle of the eyelids, or *sphincter palpebrarum*, having been described, the next object of attention was the muscle peculiar to the upper lid, the *levator palpebræ*, and afterwards the muscles of the globe itself. In order that the true position of the globe of the eye might appear, and its connexion by means of the optic nerve; also, that a correct idea might be obtained of the space in which it moves, the points of insertion of its muscles, and

the origin of its vessels and nerves, the bony cavity, or orbit, in which the whole is contained, is here accurately represented.

Plate 4 points out the particular origins and insertions of the muscles of the eye-ball, with their relations to one another, and to the surrounding parts. The distribution of vessels to the muscles is likewise here shewn.

Plate 5 is appropriated to the representation of the globe itself of the eye, or what may be termed the real organ of vision. By means of different sections, horizontal and vertical, every part is distinctly brought into view, in a manner superior to what has been hitherto accomplished.

In the 6th *plate*, the wonderful and beautiful network of vessels distributed to the globe of the eye is shewn, as it appears under the microscope.

Plate 7 exhibits the bony case or orbit which at once incloses, and defends from injury, the various parts already mentioned.

In the 8th and last *plate* the different parts described separately in the preceding figures are represented as a whole in their relative situations, a perpendicular section of the orbit being made, so as to exhibit every part in its proper place.

The most original part of the work is that where the author points out the differences in the general form and figure of the eye, under the different circumstances of sex, climate, and race ; an object which has heretofore scarcely been at all noticed by anatomical writers. It appears, both from the

plates and the accompanying descriptions, that very striking differences subsist in the character of the eye, in men and in women; in the European and in the African; and between the former and the *Albinos* or white negro (*leucæthiops lucifugus*). As an interesting specimen of the work, we shall give the distinctive characters of the negro eye, as compared with the European.

Differentia oculi externi Æthiopis et Europæi.
 ‘The more frequent have been my opportunities,’ says M. Soemmering, ‘of observing living negroes, and of dissecting them when dead, the more have I been convinced that no correct description of the external eye in them is any where to be met with. Wherefore it seemed to me highly necessary to give an accurate delineation of this organ; especially when it appeared, that the structure of the African eye was better accommodated to the climate of the torrid zone than the eye of Europeans.’

‘The principal differences which appear to me to exist between them are the following.

‘The eyebrows in negroes are thin and scanty, and project less over the eyelids than in Europeans; so that, although strongly drawn downwards towards the root of the nose, they shade the eye less effectually: the hairs of the eyebrows are not curled, but, as occasionally observed in Europeans, are straight, or but slightly curved and tortuous.

‘The whole substance of the eyelids is thicker, and, as it were, swelled; so that the ball of the eye appears buried in the skin of the face, as behind a mask; whence it happens, that the rays of light, which fall on the eye in small or very

acute angles, are reflected from the eyeball. For the same reason, the light falling on the eyelids while shut in sleep, affects the eye itself less forcibly.

‘ The lower eyelid is not comparatively so much thinner and smaller than the upper, as in Europeans, but is altogether wider and thicker; and, as I have observed in living subjects, is more moveable in respect of the eyeball. Hence, those rays of light that are reflected in acute angles from the surface of the earth towards the eye, are prevented from striking upon its surface, by the greater breadth of the lower eyelid, as well as by its greater mobility.

‘ The outer canthus or commissure of the eyelids is not so open; so that the surface of the eyeball is less seen. Hence also many of the rays of light which are directed towards the eye, both from above and below, are intercepted.

‘ The margins of the eyelids are more serpentine or tortuous, and likewise thicker, and the external labium of the margin is more rounded; hence, the eyelids are more closely applied to one another when shut.

‘ The *cilia* or eyelashes of each palpebra are more curved or bent, and thicker, than in Europeans; while their blackness and closeness of position tend more effectually to seclude the rays of light from the eyeball.

‘ The *tunica conjunctiva* is of a brownish hue; I have never, indeed, observed it so white and pellucid in negroes as in Europeans: hence, the eyes

of the former appear turbid and somewhat languishing, as is the case with us, when our eyes are slightly inflamed. Does not this contribute to defend the eye from the too great splendour of light, as well as to moderate the influence of the rays which are reflected from the margins of the eyelids?

‘ The semilunar fold, that type of the third palpebra of animals, is larger in negroes. The cornea, on the contrary, is smaller, though the globe of the eye altogether is of a larger size.

‘ The iris shining through the cornea is for the most part uniform in its colour; and this is of so brown a cast, that when we look at it at but a small distance, the pupil is not to be distinguished, but the whole iris has the appearance of a round black spot; whence it is, that the eye appears fixed as it were, and its splendour diminished.

‘ The bony orbits, as in the ape, are in the same plane; and, as in that animal, seem to be placed nearer together. Hence, in negroes, the field of vision is less; and, *cæteris paribus*, fewer rays of light strike on their eyes.

‘ From all these circumstances combined, it happens that the eyes of negroes, in the warmest regions of Africa, bear more easily the most splendid rays of light, and those which are reflected from the surface of the earth at the smallest angles, than the eyes of Europeans. Wherefore I cannot doubt that the eye of the negro is better adapted to the climate of Africa, than that of the European.

‘ If we reflect on the differences now mentioned,

between the eye of the negro and that of the European, we shall find that the negro eye approaches in its characters more nearly to the eye of the ape, than to the European eye.

‘ These observations, which no physiologist, as far as I know, has hitherto made, will, I trust, be hereafter confirmed and extended: I shall only add, that the peculiarities alluded to are not to be found equally striking in all cases.’

ART. 40. *Code Pharmaceutique, à l'Usage des Hospices Civils, des Secours à Domicile, et des Infirmeries des Maisons d'Arret ; &c. i. e. A Pharmaceutic Code for the Use of Civil Hospitals, Private Families, and the Infirmaries of Prisons. By A. A. PARMENTIER. Third Edition, 8vo. Paris. 1807.*

THE repeated publication of this work of M. Parmentier may fairly be considered a proof of its value, or at least of the general estimation it is held in. Of the numerous additions made to the present edition, we shall confine our notice to the author's remarks on the formula for preparing the *aqua ammoniæ acetatæ*, the *spiritus mindereri* of former pharmacopœias.

In the second edition of his work, M. Parmentier recommended the employment of common vinegar for the preparation of this medicine; and, in addition to the œconomy of the process thus conducted, he remarks, that experience has proved, in the military hospitals, the good effects of this mode of preparation, notwithstanding the small admixture of tartaric, malate, and extract,

ive, which are always found in the ammoniacal acetate prepared with undistilled vinegar.

This mode of preparation, however, had still the inconvenience of furnishing a medicine always weak, and uncertain in point of strength; first, because common vinegar is capable of neutralizing but a moderate quantity of ammonia; and, secondly, the strength of the acid constantly varying, that of the combination must vary in proportion.

M. *Parmentier* has endeavoured to obviate these inconveniences by employing the following process.

Take of carbonate of ammonia

100 grammes - - - - (3oz. 1 drachm)

Acetic acid distilled at 2	} 1170 (2lb. 4oz. 4dr. 54gr.)
degrees of <i>Baumé's</i> aerometer	

To the carbonate of ammonia reduced to powder, add gradually the acetic acid, with the precaution of agitating the mixture to favour the disengagement of the carbonic acid: place the mixture for a few minutes in a sand bath gently heated: then filter it for use.

The ammoniacal carbonate of the shops (*ammonia ppt.*) does not ordinarily contain more than 20 per cent of carbonic acid; so that the quantity of the acetic acid prescribed in the above formula, suffices for the saturation of the hundred grammes of the alkaline salt. From hence it results, that 32 grammes (1 oz.) of this liquid compound consist of ammonia 2 grammes (36 grains); and of acetic acid, 30 grammes ($7\frac{1}{2}$ drachms).

No doubt, the acetates of potash, soda, and ammonia, thus prepared with the acetic acid, instead of vinegar, will be more pure, as they can

contain neither tartrite, malate, nor extractive matter: but experiment and observation have sufficiently proved that these three substances, when combined with the acetates, do not lessen their known efficacy as remedies. In fact, these medicines, thus prepared, were generally employed, during the late war, in the military hospitals, with the greatest success.

Preserved in the liquid form, the acetates above mentioned have none of the inconveniences of the dried acetates; for the latter, in order to their assuming a solid form, must be too long exposed to the united influence of air and light, not to have undergone considerable change in their composition. For example, we often find the dry acetate of potash become alkaline, and thus present a remedy uncertain in its effects—that of ammonia losing a portion of its acid, on account of the slight adhesion this has to the ammonia. In short, the liquid acetates, here proposed, merit a decided preference over the concrete ones, from the ready decomposition which the latter undergo in the process, however carefully managed. It is necessary, however, that they should be only prepared as wanted, as they undergo a change by long keeping.

Nearly two months ago, M. *Lartigue*, an apothecary of Bourdeaux, and member of the College of Pharmacy of Paris, was engaged in a similar pursuit, and in nearly the same point of view. He presented to the Society of Apothecaries of Paris, and also to the Medical Society, a memoir, in which he proposes, 1st. to determine a mode of preparation which will give an uniform *Spiritus Mindereri*; 2. to indicate in what proportions

the crystallized ammoniacal acetate is contained therein.

After a series of experiments, he was led to conclude, that if the *Spiritus Mindereri* has been laid aside in some countries, it is because the inequality and uncertainty of its preparation have disappointed physicians in the effects they expected to obtain from it; and that, in order to give this medicine an uniform degree of strength and efficacy, it is necessary to prepare it in an uniform manner; such, for example, as the following.

The acetic acid in most shops is not above half a degree of strength of Beaumé's aerometer; and experiments have demonstrated that the *Spirit. Minder.*, prepared with this acid, is only of two degrees; but if we saturate the carbonate of ammonia with the acetic acid of two degrees, as produced either by congelation or by adding to it the acetic acid (radical vinegar), the *Spirit. Minder.* will shew five degrees of strength. Thus prepared, it is transparent and limpid; it has a saltish taste which is not disagreeable, and an odour slightly acetic, though the composition is perfectly neutral. This method appears preferable to all others; for we avoid evaporation, and consequently the chance of decomposition, and we have a *Spiritus Mindereri* that is always of the same degree of density, and which is little if at all coloured.

The London Pharmacopœia directs the employment of distilled vinegar, but without determining its strength; whence the medicine prepared from it is liable to variation.

Dr. Schweilgué, in his *Clinical Pharmacopœia*, the principal merit of which is the correction of several pharmaceutic processes, expresses himself thus with regard to the *Spiritus Mindereri*.

‘ This salt has not always the same degree of concentration in the shops, and it does not commonly retain the crystalline form; so that we never know the strength of what we employ. In order to obviate this inconvenience, it ought to be prepared extemporaneously, regulating the degree of its concentration by the quantity of carbonate of ammonia. For this purpose, we may take, for example, one or two parts of crystallized carbonate of ammonia, adding to it a sufficient quantity of the acetic acid, or of good vinegar. When the effervescence has ceased, water may be added so as to make up the whole 100 parts. The dose then may be determined by the quantity of the carbonate of ammonia.’

ART. 41. *A Popular View of Vaccine Inoculation, with the Practical Mode of conducting it: shewing the Analogy between the Small-pox and Cow-pox, and the Advantages of the latter.* By JOSEPH ADAMS, M.D. F.L.S., Physician to the Small-pox and Inoculation Hospitals, and to the New Finsbury or Central Dispensary. 12mo, 161 pages, price 2s 6d. London. 1807. R. Phillips.

WE have repeatedly of late seen reason to believe, that ever since the introduction of the vaccine inoculation, the knowledge of small-pox, its characters, and treatment, have been on the decline amongst us; a circumstance of no great moment, indeed, as long as any rational hope

could be entertained of its ultimate extermination by the general diffusion of the vaccine practice. But now that all expectations of the sort cannot but be deemed chimerical and visionary, from the new practice having failed to realize the too sanguine expectations of its votaries, it becomes highly necessary to renew our acquaintance with small-pox, that, in the yet possible event of a general recurrence to the variolous inoculation, we may be prepared to diffuse its benefits as widely, and with as little alloy, as possible.

The work before us, though written with the professed view of extending our knowledge of the vaccine inoculation, will go far towards supplying the deficiency above complained of. It teaches us, upon the sure ground of experience, the circumstances upon which the mildness and severity of the inoculated small-pox in a great measure depend; and, by so doing, tends to deprive it of those terrors which still attach to the ordinary practice of it, and which are not altogether without foundation, though they have of late been unnecessarily and extravagantly magnified. The facts here detailed are no less interesting in a physiological, than a pathological point of view: they tend at once to increase our knowledge of the animal œconomy, and to enable us to combat with more effect some of its most formidable diseases. The importance of the subject, and the instructive manner in which it is here handled, will induce us to examine the work with more minuteness than a simple inspection of its bulk might otherwise seem to justify.

The first chapter is introductory and historical. A few observations are made with regard to the time of the first appearance of small-pox in Europe, a point of too much ob-

security and uncertainty to induce us to dwell on it. The question, whether inoculation has lessened the number of deaths by small-pox, is started but not solved. One thing, however, the learned author remarks as certain; which is, that inoculation has contributed much to the comfort and security of all prudent individuals and families, whatever may have been the case with the less provident, or those whom prejudice or other causes have interdicted from profiting by so beneficial a discovery.

“Happily for the present age,” says Dr. A. “it has pleased Providence to make a Jenner the instrument of teaching us a mode of passing through this disease,” [the small-pox] “which not only secures the person who submits to it, but in no respect endangers the safety of others.”—From this passage it appears, that the vaccine and variolous are considered by the author as one and the same disease, a supposition the foundation of which we shall see presently.

In the second chapter, the author inquires into the causes to which the advantages of receiving the small-pox by inoculation may be attributed. With whatever disease the human body is seized, the effect, the author observes, as with regard to impressions on the mind, is much increased by the suddenness of the shock. Sydenham first remarked, that in the most violent small-pox the eruptions appear at an early stage, viz. about the second, or at most the third day of the disease. The first pustules, it is well known, appear on the face, and from these Sydenham formed his prognostic. If the pustules on the face were numerous and confluent, he judged the patient to be in the

utmost danger, however distinct and even sparingly they appeared in other parts of the body.

An early eruption of pustules, therefore, is the indication of a violent shock to the system, and the quantity of them in the face predicts the future danger of the disease. If, then, the effect of the first shock can be limited in its extent of surface, it follows that the danger should be proportionally lessened. Such, in the author's opinion, is the object of inoculation; and in proportion as we succeed in it, we secure our patient from danger.

“ By introducing contagious matter at one particular part, we confine the first shock to that part. Though, therefore, the inflammation may be violent, and the pustules confluent, yet the space they occupy on the arm is small compared with the surface of the whole face. And though these pustules will retain their character throughout their whole progress, yet being neither numerous, nor occupying a large space of the skin, the constitution is little affected by the changes they go through. Hence it is easily understood that even should the eruptive fever be considerable, yet the secondary fever, as Sydenham calls it, or the fever at the turn, so much dreaded in the casual disease, is scarcely felt under inoculation.

“ It will also be readily understood how important it is to secure the effect of our inoculation, so that the first shock may with certainty be confined to the inoculated spot. Hence the advantage of always using fresh matter, which will be likely to produce a more certain and quick effect on the part. It must be still more important to use the clear fluid taken from the eruption in its early stage, because at that time only it affords the genuine infection. When it afterwards becomes

thick, it is mixed with matter formed for the purpose of healing the pustule; and sometimes, if taken in its later stage, it will consist of nothing else, and disappoint the inoculator altogether. If at the same time the person inoculated is exposed to others under the disease, he may catch it in the casual way; and though the inoculated, like any other part on which the skin is punctured, may still show a higher degree of inflammation, yet, if this inflammation does not precede the general eruption, the patient will derive no benefit from it.

“ Such is the advantage we derive from inoculation, though the causes were unknown probably to the discoverers—certainly to those who first introduced it into England, and even to those who afterwards so far improved it, as to reconcile the public to such an innovation. The operation of the Greeks was a simple puncture by a needle, and the subsequent treatment was merely a customary exposure to the common air. The English physicians conceived they made great improvements by large incisions, and by introducing a considerable quantity of matter in what they called a state of maturation. In some instances a cotton thread or other extraneous body was introduced with the matter. Not contented with this, they exasperated the subsequent disease by confining the patient to hot air and a close apartment. The consequence was that a violent inflammation of the arm, from the severity of the operation, sometimes superseded the variolous action, so that the whole constitution should be infected without the previous advantage of confining the first shock to the inoculated part. When this happened, the eruption would be as general as in the casual disease, and the subsequent treat-

ment in both cases added greatly to the distress and danger of the patient.

“ The improvement introduced by the Suttons was to avoid every means of exciting any other action, which might interfere with that which was the object of their operation. Instead, therefore, of large incisions and the insertion of extraneous matter, their incision was as simple as possible; and not only recent contagion was chosen, but the crude lymph in the early stage of the pustule was preferred. When it became purulent, it was found more uncertain; and in proportion as the inoculated part showed early signs of inflammation, was their prognosis favourable*.

“ It is surprizing after this, that some of the most experienced writers, who followed the practice of the Suttons, should assert that the suppuration at the arm, and at the general eruptions, keep pace with each other. That such is sometimes the case cannot be doubted, but under the most favourable circumstances the inoculated part will begin to dry before suppuration commences at the other pustules, and to scab before the pustules begin to dry.

“ Should the most unfavourable events take place, and the eruption in the face show the same maturity as in the inoculated part, still the patient has been introduced to the disease under many advantages. He has neither been surprized till the moment of the eruptive fever under ebriety or high excitement from juvenile exercises, or before he is become convalescent from other diseases; and has withal a certain confidence in the operation which tranquillizes his mind. The mode of treat-

* Sir G. Baker and Baron Dimisdale as above.

ment also during the progress of the disease was the same as recommended by Sydenham.

“Inoculation thus restored to its original simplicity was found so uniformly successful, as to bear down all opposition. When we reflect on this sudden and almost universal conversion of the public mind, there is reason to believe that the success of the Suttons was at first greater than subsequent records can produce either in their own practice or that of others.”

Chap. 3. ‘On the various Kinds of Small-pox, and on the Approximation of the most favourable to the Cow-pox.’ The object of this chapter is to point out a variety of small-pox, which, though noticed by nurses under the name of the *white sort*, does not appear to have been described by writers on this disease. The most striking peculiarity of this kind of small-pox is, that the pustules remain white on the face as well as on the rest of the body, till they begin to scab. It is well known that, in the distinct small-pox, large pustules are considered a favourable symptom; but in the white sort, the pustules are never very large, but round and uniform in proportion as the disease is well marked. As they increase, the upper surface extends over the base; and as they dry, the scab becomes nearly globular; that is, the whole is distinguishable above the skin, without concealing more of the sphere than would happen were such a figure actually placed upon the surface. At this time the scab is become of a pale amber, and dries much harder than in the common distinct disease. From the figure, colour, and other properties preserved throughout the whole progress, the author calls this kind of small-pox the *pearl sort*. The nearer the resemblance is to a

pearl, and the smaller the individual pustules, the more perfect is the character.

The most important circumstance relating to this variety of the disease is, that it in some degree perpetuates itself by inoculation; for by continuing with great caution to inoculate at the hospital from the pearl small-pox, and afterwards by selecting those arms which had most the appearance of cow-pox, Dr. A. at last succeeded in procuring a succession of arms so nearly resembling the vaccine, that an universal suspicion prevailed among the parents, that they were deceived by the substitution of one for the other, and especially as, in many of them, no secondary pustules whatever appeared. It became necessary, therefore, to ensure the appearance of pustules, by employing matter from subjects where these had taken place. This was not the only time the author was interrupted by the prejudices of the parents, in his attempt to perpetuate a favourable sort of small-pox.

Chap. 4, contains 'Presumptive Proofs, deduced from the Laws of all other morbid Poisons, that the Variolous and Vaccine are the same.'

From the known fact, that constitutional diseases of a different kind do not go on together, but that one of them is always suspended by the other, as in the case of small-pox by measles (or by chicken-pox, which is here said to have the same effect); and from its appearing that, in opposition to this law, small-pox and cow-pox do go on together; it may be fairly inferred, the author thinks, that there is no specific or essential difference between them. This is so important a question, and its validity so likely to be disputed,

that we shall suffer the author to argue it in his own words.

“ If small-pox and cow-pox are inserted at the same time in different parts of the same person, we find no interruption whatever in the progress of either. Both begin and go through their usual courses with the same regularity as if only one of them had been inserted in two different places. If the secondary pustules of the small-pox are late in coming out, it will sometimes happen, that the cow-pox inoculation having completed its course, will become the seat of a small-pox pustule, or that its whole surface will become variolous. This is easily known by the contents becoming purulent or mattery instead of remaining limpid, a difference which we shall presently have occasion to remark makes the only unequivocal distinction between the two diseases.

“ It was first remarked by the late Dr. Woodville, that if a person is inoculated to-day with small-pox, and three or four days afterwards again inoculated with the same morbid poison, both the inoculated places will arrive at their height at the same time. This is strictly true, and the only difference between the two insertions will be that the last rarely equals in size, though it arrives at the same stage of maturity with the first. The same has also been observed of cow-pox ; and this is now so well known, that the second insertion has been proposed as a test of perfect vaccination.

“ This will be hereafter considered. My only intention on the present occasion is to offer a further proof of the identity of these two morbid poisons. For if small-pox is inserted to-day, and the same subject inoculated three or four days after with cow-pox ; or with cow-pox to-day, and three or four days after with small-pox, the

same consequences will follow as if both insertions had been of small-pox only, or of cow-pox only; that is, each will arrive at maturity at the same time, and the only difference will be, that the last insertion will produce a smaller pustule or vesicle."

With regard to the eruption, which has been supposed to characterize small-pox, it is observed that, before the cow-pox was known, variolous inoculation was considered as perfectly secure without any secondary eruptions, provided the suppuration at the arm and the symptomatic fever were regular; while secondary cow-pox eruptions, however rare, have occurred in the practice of too many impartial observers to be questioned.

If cow-pox is not infectious by effluvia, it only shews, Dr. A. thinks, a lower degree of contagious power; and it is not certain that, in some mild cases of small-pox, there may not be the same want of infectious property. Again, in small-pox the degree of fever is uncertain, and oftentimes as mild as in the *severest* cow-pox—it might have been added, without exaggeration,—or even in the *mildest*.

Chap. 5. 'Shewing the Probability, that the first Improvers of Small-pox Inoculation owed part of their success to the Insertion of a favourable Kind of Small-pox.' The author thinks it likely that the Suttons, in the beginning of their practice, inoculated by accident from the pearl sort of small-pox, which was for a long time afterwards perpetuated at their establishment, and that they owed much of their fame to this circumstance. However this may be, it is certain that their success, as described at the time by impartial writers, has never

since been equalled. A letter from a clergyman to Sir George Baker, dated August 11th, 1765, describing the success of the Suttons, concludes thus—"But danger seems out of the question, and in ten years practice our operator has not lost one patient." Soon after this, however, the same gentleman informed Sir George of two fatal instances occurring in one year to the same operator; but in each of them there were circumstances, independent of the inoculation, which might be fairly supposed to have contributed to the event; as intemperance, and previous disease.

Chap. 6. 'On the Mode of conducting Small-pox Inoculation.' We would willingly transcribe the whole of this chapter, but that it would be an injustice to the author, as well as an injury to the public, to do any thing that might lessen the circulation of so useful a work: we shall therefore merely observe, that the directions laid down regard the season of the year proper for inoculation—the state of the person to be inoculated—the choice of matter, and the manner of inserting it—and, lastly, the treatment proper during the process.

Chap. 7. 'On the prognostic Symptoms of the Disease.' As we have nowhere seen the circumstances indicative of mildness and danger so clearly laid down, and as this part of the work is calculated to increase our confidence in a practice which is likely, from all appearance, to become more general than it has been for some time past, we shall take the liberty of quoting the author's remarks on the circumstances which serve to re-

gulate the prognostic in cases of variolous inoculation.

“ The most important of these is the appearance on the arm. If that shows a slight blush on the 3d day inclusive from the insertion, we are sure that the operation has succeeded, and in such a manner as to supersede any general infection. The little incision will now show a black appearance, from the blood having hardened upon it. The attendant blush rarely surrounds this black spot, but is usually distinguishable by the naked eye on the 3d or 4th day, and if the finger is applied over it, a sensible hardness will be perceived below the skin.

“ This blush gradually increases for the two following days, after which it will be easy to perceive a beginning vesication, or slight elevation of the cuticle resembling very small bladders. By the 8th day the character of the vesicle begins to be formed, but not always with certainty till the 10th. If the progress has been very favourable, the arm will at this time exhibit a circular elevation, flattened on the surface, and surrounded with a circumscribed redness. With this appearance, unattended with very high symptoms of fever, we may ensure our patient's safety, and the probability that he will go through the disease without any further trouble, and with no pustules that will mature.

“ The next favourable appearance is where the elevation of the cuticle is less marked, perhaps less circular, but the line equally defined, with a figure less regular; that is, the circle may not be so true, yet the edges are not jagged so as to form a different appearance from the rest of the surface.

“ The complexion is usually blue, and the sur-

rounding redness follows the irregularity in the figure at a considerable distance, but its edges are defined and not shaded. Though in these cases the fever has been somewhat higher, yet we have every certainty that the danger is over with it; and if any pustules appear, that they will be at a very late period, without affecting the general health, and probably without maturing.

“ There is a third appearance that must be accurately distinguished from the confluent arm, which we shall presently describe. The appearance I refer to is where the inflammation runs very high, with a surrounding redness, irregular in its figure, and shaded at its extremity, instead of being circumscribed. When this appears, we must examine the progress with great accuracy; and if we find a cluster of very small blisters which only run together from their vicinity, but are perfectly distinct at the edges where they are more distant from each other, we may depend upon it that the case will prove favourable; and though the patient may have suffered considerably during the symptomatic fever, yet that he will have no subsequent fever nor probably pustules, and also that the arm will heal without any more trouble.

“ But if this high inflammation is unattended with any distinct little bladders, particularly if, instead of rising above the surface, it seems somewhat depressed with a dusky brown skin as if drawn tight over it, the fever will be at the same time considerable; and though all constitutional danger may subside with it, yet we may expect a deep slough, or mortified part in the arm, which must be carefully attended to. The parents or attendants will be much alarmed as this slough separates, to perceive so deep a hole as will be discovered, but there is in reality no danger attend-

ing it. All the caution required is to prevent the sore from being fretted by the linen adhering to the discharge. The remedy is to expose the part to the open air without dressing or covering of any kind: the consequence is a coagulation of the effused lymph by which the part is skinned over; or if matter has been formed, it hardens into a scab, and if left to itself will heal without further trouble.

“The only doubtful appearance in the inoculated part is when the progress is slow without much inflammation, and with no surrounding redness. If at the same time pustules should appear, we may be sure the patient will derive no benefit from the inoculation, and the best that we can expect is that the fever may be mild, and the eruptions few and distinct. In all such cases, however, we are to consider the disease as the casual small-pox, regulating our treatment and forming our prognostic according to the degree of fever and character of the eruption.”

Chap. 8. ‘Of the Advantages of Vaccination above Small-pox Inoculation.’

Chap. 9. ‘Candid Examination of the Objections to Vaccination.’

Chap. 10. ‘Is Vaccination a Security against the Small-pox?’

These are all so much to the same point, that we shall consider them together; and that but briefly, as the chief arguments they contain have been repeatedly urged before.

The ill consequences which are admitted to have occasionally occurred after vaccination, are said not to be more frequent than after small-pox, and to depend, in both cases, upon some pecu-

liarity of constitution in the individual, rather than upon the inoculation. With regard to the security afforded by vaccination, it is alleged, that cases of small-pox a second time are probably equally numerous; while most of the cases of small-pox after cow-pox have been mild and unimportant, and their characters imperfect. *Severe* or fatal cases of small-pox after vaccination (which are not disputed to have happened in a few instances) the author also supposes to be not more frequent than after small-pox itself.—These, however, are the very points, about which the parties are still at issue; and, unfortunately, we find nothing here that seems likely to terminate the dispute.

Chap. 11. ‘Are the Marks of Vaccination more uncertain than those of the Small-pox Inoculation, and how are we to estimate the Security of Vaccination?’ The author candidly confesses, that the friends of vaccination have been much too forward in accounting for supposed failures, by the imputation of an improper, or, as they often call it, an ignorant, mode of conducting the process. He thinks it, however, probable, that cases of imperfect vaccination were at first numerous, from the characters of the disease not being sufficiently known, and from the practice having got into the hands of unqualified persons; but for this evil, if it be one, we are indebted to the hot-headed friends of vaccination, who averred it to be so safe and easy, that old women (either in petticoats, or in long black gowns and sleeves) were fully competent to the task.

The crystalline transparency of the fluid is particularly insisted upon, as a *sine qua non* of its

efficacy. With regard to the *golden rule*, of taking it before the eighth day, the author contents himself with an *if* on the subject; whence we may easily deduce his opinion.—“It is generally thought best to take the fluid before the eighth day; but *if* [*when*, we presume, has the same import] this is done,” &c. p. 111.

One caution here suggested is, that where fluid is taken from a vesicle (this being the only one) before the eighth day, the vesicle should be watched till scabbing; for if, without other violence than the puncture, the contents should become mattery, or the scab soft, we ought not to depend upon the issue of our vaccination, but take another opportunity of repeating it.

The succeeding chapter relates to the mode of treatment during the regular progress of vaccination. As it is not possible to ascertain how far the inflammation inseparable from the operation may extend, the author prudently recommends some attention to be paid to the means which are known to be useful in moderating inflammation; as the exhibition of an occasional purgative. For relieving the inflammation, when considerable, he has always found the application of a cold table-spoon to the part a sufficient remedy.

Chap. 13, describes the Deviations from the customary Laws of Vaccination. Whenever the appearances and progress of the vaccine vesicle differ from the characters which are admitted to constitute the regular disease, the inoculation should be repeated, and the causes of the irregularity sought for, and, if possible, removed. Amongst these, excoriations behind the ears are mentioned, but rather, we suspect, out of com-

pliment to the promulgator, than from any conviction of their importance; for the author observes that, '*whatever may be the issue of our examination, we should repeat our insertion, as it cannot be attended with any injury.*'

Dr. A. repeats here an observation formerly made in his work on *Morbid Poisons*, with regard to the real existence, in some cases, of secondary vaccine vesicles. They usually appear about the close of the second or beginning of the third week, when the original vesicle has begun to scab. They contain, he says, a transparent fluid, and by inoculation produce the true vaccine disease with as much uniformity as the primary vesicle.

This terminates the body of the work. An appendix is subjoined, which contains the Report of the College of Physicians on Vaccination, and the correspondence of the author with the College on the subject, together with a Return from the Register of the Small-pox Hospital, stating the number vaccinated, with the proportion of failures that has come to their knowledge. As this is a very important document towards the History of Vaccination, and as it does not appear in the College Report, we deem it incumbent on us to record it. We have already, however, gone to such a length, that its further consideration must be postponed to our next number.

ART. 42. *Coup-d'œil Physiologique sur la Folie, &c. i. e. A Physiological Survey of Mania, or Reflections and Analytical Researches into the Causes which dispose to this Disease, and those which excite and maintain it; followed by an Account of the various Methods proper to be employed in the Treatment, according to*

its Cause, &c. By P. A. PROST, D.M.P., of the Society of Medicine of Paris, formerly Surgeon in Chief to several Hospitals and Regiments, &c. 8vo, 32 pages. Paris. 1806.

THE object of the author of this pamphlet is to prove, that mania is less frequently owing to an affection or mal-conformation of the brain, than to a disorder of the digestive organs or those of reproduction, the functions of the brain, as he supposes, being disturbed by sympathy only.

He endeavours to demonstrate, that whatever be the cause of mania, we ought not to limit ourselves in the treatment to moral means, and general remedies, such as baths, bloodletting, &c. which, in fact, are sometimes dangerous; but that our curative efforts ought principally to be directed towards the organs of digestion. He adduces a great number of facts in proof of the utility of emetics, purgatives, or emollient clysters, in the cure of mania; and he proposes immediately to establish at Paris a house for the reception of patients of this description, regulated upon the principles here announced.

ART. 43. *A View of the Nervous Temperament; being a practical Inquiry into the increasing Prevalence, Prevention, and Treatment of those Diseases commonly called Nervous, Biliary, Stomach, and Liver Complaints; Indigestion, Low-spirits, Gout, &c.* By THOMAS TROTTER, M.D., late Physician to his Majesty's Fleet. 8vo, 328 pages, price 7s. Longman and Co. London. 1807.

THIS publication being evidently rather intended for the use of the hypochondriacal part of the community than the medical faculty, we shall

not bestow much time on its analysis. That the public mind abounds with erroneous ideas in regard to the subjects mentioned in the title page, cannot be questioned; but it is from medical writings that they have imbibed them; writings which aim at making *every one his own physician*; in other words, which teach the public to tamper with their health, and to have recourse to the use of remedies of the most active kind, without possessing any real knowledge of their nature, or that of the disorders which they are given to remove. Such is the case at present with regard to calomel, which the modern doctrine of *bile and liver complaints* has familiarized to every fine lady, and even every old nurse. Our author, upon the present occasion, is, we conceive, to use a vulgar phrase, the day after the fair. *Nervous disorders* are now nearly as much out of vogue, as *foul humours in the blood*: indeed, the latter, since the introduction of cow-pox amongst us, are likely again to rear their heads; and we perceive, by their advertisements, that the nostrum-mongers, who undertake, at such reasonable rates, to purify the fluids of his Majesty's subjects, are preparing to take advantage of the circumstance.

The seat and origin of nervous disorders, according to Dr. Trotter, are to be found in the extremities of the great sympathetic nerve, and not in the brain, as used to be supposed. "On the whole," he says, "it is fair to conclude, that the pathology of these diseases is to be sought in the deranged sensations, and inverted sympathies, of the great sympathetic nerve, and in the irregular action of all those organs to which it is distributed." The most prominent symptom in these cases is displayed in the disordered state of the digestive organs, which leads of necessity to general debility

of the system. The indications laid down are, to strengthen the body, by iron, Peruvian bark, and bitters; and to palliate particular symptoms by antispasmodic remedies; as opium, asafoetida, camphor, æther, and the like.

Nor has our author overlooked the moral treatment of the nervous temperament; and which consists in a *reversed mode of living*, or a total change of habits and customs. Dr. T. adduces the following decisive proof that the plan he recommends is a prolific source of advantages. "A few years ago, when it was my good fortune to be honoured with unbounded confidence by the naval service, I was consulted by some particular friends of great affluence on the bad health of their wives, who, to the regret of all concerned, had never been in that happy way in which 'ladies wish to be, who love their lords.' These ladies, after being married for several years, without having children, devotees of fashionable life, and a prey to painful *nervous* disorders, are now the mothers of healthy boys and girls, and enjoy the best health imaginable. All these happy changes were effected by little assistance from medical prescription; they were brought about by *reversed modes of living*." It is a pity that Dr. T. has not informed us to what extent this *reversed mode* of living was carried: whether the ladies went to sea with their lords, or consoled themselves as well as they could at home. We cannot but think that Dr. T. is in possession of a very valuable secret, superior even to that of Monsieur *Millot*, who professes to teach the art of procreating the different sexes at pleasure*; and he would do well to publish it for the good of society.

* *L'Art de procréer les Sexes à Volonté. Par M. Millot, à Paris.*

THE
MEDICAL AND CHIRURGICAL
Review.

DECEMBER 1st, 1807.

ART. 44. *An Account of the Diseases of India, as they appeared in the English Fleet, and in the Naval Hospital at Madras, in 1782 and 1783 ; with Observations on Ulcers, and the Hospital Sores of that Country, &c. &c. To which is prefixed, a View of the Diseases on an Expedition and Passage of a Fleet and Armament to India, in 1781. By CHARLES CURTIS, formerly Surgeon of the Medea Frigate. 8vo, 283 pages, price 7s. Edinburgh. 1807. Murray. London.*

WE are not informed why the observations here collected, and which were made so many years ago, have been so long withheld from the public. By such delay, the speculative part of the work may possibly have been rendered more chaste, but, as a simple narrative of facts passing under the author's observation, it can have gained nothing. Presuming, however, the author's reasons, whatever they were, to be of sufficient weight, we shall only remark that his opportunities for observation were considerable, as, besides his situa-

tion on board ship, he did the duty, in part, of the Naval Hospital at Madras, during the active service of the fleet in the years 1782 and 1783.

The first part of the volume, from page 1 to 43, contains a journal of the health of the crew of the Manilla Transport, consisting of about forty seamen under the care of the author, and one hundred and eighty foldiers in charge of the hospital surgeon and two mates. The voyage was unusually long and harassing, being protracted to no less than eleven months. The sickness and mortality were in consequence great. Of the troops, seventy-five men died in the whole, viz. forty from fevers, eighteen from dysenteric flux, and the remainder from scurvy and cachexy. Of the ship's company two only died from fever, and one from flux combined with scurvy. This difference of mortality, however, between the foldiers and failors, does not appear to have been owing to any difference in point of medical treatment, but to the failors having been kept above deck, both through the night and day, while the foldiers were confined below the hatches, and exposed to foul air and accumulated filth of every kind.

In regard to the scurvy, it does not appear that medical treatment was of much use, as long as the causes of the disease continued to act on the sick. Neither essence of spruce nor of malt appeared to have done much, even in those ships which had these substances in the largest quantities, after the scurvy had once shewed itself; but where they were served out early, the disease was later in making its appearance than in other cases. The author seems to us to shew an unreasonable degree of scepticism in the following passage. "With

regard to sea-scurvy," he says, "reports and accounts have been published, *as if* this had been cured at sea, by lime or citron juice, lemon rob, nitre dissolved in vinegar, nitric acid, &c. all which I would suspect to be rather something of the hyperbolical," p. 41. Whatever may be the case in respect to the mineral acids and nitre, the evidence in favour of both the curative and preventive power of lemons stands upon unquestionable ground.

The rapid recovery of the scorbutic patients on their being landed at the island of Johanna was very striking: a few days, the author says, made a remarkable change in their condition. Tropical fruits, pot-herbs, and fresh beef, were procured in great plenty, and the cocoa-nut was in such abundance, that both officers and men diluted their spirits with no other liquor; and at a certain period of its growth, this nut yields a clear subacid sweet juice, which, with a due proportion of spirits, is made into excellent punch at once. On such diets and drinks, recoveries from the severest degrees of scurvy were rapid. The spongy gums, black vibices, and exanthematous blotches, very soon began to disappear: the colour first changing from purple or black to a dirty yellow, and this also vanishing altogether in a very short time longer; so that it was very common to see men, who had been carried on shore in their hammocks, walking about with crutches, or by the help of a single stick, in three or four days. Some stiffness and a degree of swelling, however, remained about the joints for a longer period.

The next section of the work treats of India Diseases, and first of the spasmodic cholera, cramp

or *mort de chien*, as it is figuratively called in the country. The following is the author's description of this terrible malady.

‘ In all the patients, the disease began with a watery purging, attended with some tenesmus, but with little or no griping. This always came on some time in the night, or early towards morning, and continued some hours before any spasms were felt; or these were confined to the toes and feet; and slight affections of this kind being very common in the country, the patients seldom mentioned them till they began to be more severe, and extended to the legs or thighs. This purging soon brought on great weakness, coldness of the extremities, and a remarkable paleness, sinking and lividity of the whole countenance. Some at this period had some nausea and retching to vomit, but brought up nothing bilious. In a short time the spasms began to affect the muscles of the thighs, abdomen and thorax, and lastly they passed to those of the arms, hands and fingers; but I never saw, then or afterwards, those of the neck, face, or back at all affected. The rapidity with which these spasms succeeded the first attack, and their severity, especially as affecting the muscles of the thorax and abdomen, denoted in general the degree of danger in the case. The affection is not as in tetanus confined to a single muscle, or to a certain class of muscles only. Neither does it, as in the spasmus clonicus, move and agitate the members. It is a fixed cramp in the belly of the muscle, which is gathered up into a hard knot, with excruciating pain. In a minute or two this relaxes, is again renewed, or the affection passes to others, leaving the miserable sufferer hardly an interval of ease; and, lastly, it passes from one set to another; from those of the inferior extre-

mity to those on the upper parts, leaving the former free. The patients complain much of the pain of these cramps; think they obtain some relief from friction of the parts, and cry to their companions to rub them hard. As the disease proceeded, the countenance became more and more pale, wan and dejected; the eyes became sunk, hollow, and surrounded with a livid circle. The pulse became more feeble, and sometimes sank so much, as not to be felt at the wrist, in two or three hours after the spasms came on. But so long as it could be felt, it was but little altered in frequency. If the spasms happened to intermit, it would sometimes rise a little, and the countenance assume a better look. The tongue was generally white, and more or less furred towards the root; and the patients had all great thirst, or rather a strong desire for cold drinks; but there was no headach or affection of the sensorium commune throughout.

“The coldness of the extremities, which was perceptible from the very first, continued to increase, and spread over the whole body, but with no moisture on the skin, till the severity of the pain and spasms forced out a clammy sweat, which soon became profuse. The hands now began to put on a striking and peculiar appearance. The nails of the fingers became livid, and bent inwards; the skin of the palms became white, bleached, and wrinkled up into folds, as if long soaked in cold water; the effect, no doubt, of the profuse cold sweat, which is one of the most pernicious and fatal symptoms of the disease; both from the effect it has in such a climate, of exhausting the strength, and in abstracting heat from the system. In some of the present cases, and in many others after this, we had recoveries from the severest degrees of spasmodic affection; even where

the pulse had been for hours completely lost at the wrist, and the body perfectly cold; but never of any who had these profuse cold clammy sweats, and where the hands had put on this appearance.

“ All this while the purging continued frequent, and exhibited nothing but a thin watery matter or mucus. In many, the stomach became at last so irritable, that nothing could be got to rest upon it; but every thing that was drunk was spouted up immediately, without straining or retching. The countenance and extremities became livid; the pulsations of the heart more quick, frequent and feeble; the breathing began to become laborious and panting; and, in fine, the whole powers of life fell under such a great and speedy collapse, as to be soon beyond the power of recovery. In this progression, the patient remained from three to five or six hours from the accession of the spasms; seldom longer. These began at last to abate, but with more internal oppression, great jactation, panting and gasping for breath; from the diminished action of the respiratory organs: for there were no marks of oppression or effusion on the lungs; and the motion of the heart, so long as it could be felt, became more and more quick and irregular, till death came at last to the relief of the miserable sufferer.

“ Some time before that event took place, the spasms, gradually abating, left the sufferers entirely; and so much possession of their faculties did they retain, that they would continue to talk sensibly to their messmates to the last moment of their lives, even when the whole body had become perfectly cold, and all pulsation at the heart had ceased for a long time to be distinguishable.”

The treatment of this formidable malady ap-

appears to have been very unsatisfactory. When attended with any marks of bilious accumulation, evacuants were prescribed with good effect; but where nothing of that sort was perceived, opium and cordials proved most successful. Both modes of cure, however, too often failed. No light was thrown upon the nature of the disease by dissection.

Liver Diseases. A number of judicious remarks occur on hepatitis, of which the author makes three varieties, the acute, the chronic, and the obstructed state the consequence of the two former. He considers the Indian hepatitis to differ materially from the disease as it appears in Europe. In the former, he says, the symptoms which are primary, and indicative of inflammatory affection, are often very slightly marked, even where the inflammation exists in such a degree as to run with great readiness and rapidity into suppuration. The pain felt in the side is not at all constant or acute; the patient himself takes little notice of it; seldom mentions it unless he is asked about it; and, when you do so, he tells you only, he has felt at times slight pains about the pit of the stomach, or about the right side. And it is only from observing the secondary symptoms, such as a flux, or a short dry cough, and pain felt at the top of the shoulder, or that there is a degree of fulness or tenderness on pressing the region of the liver a little hard, with some yellowness of the eyes and countenance, that the true state of the disorder is to be ascertained.

Pain at the top of the shoulder, which is considered in Europe as a constant and pathognomonic symptom of hepatitis, is far from occurring, Mr. Curtis says, in every case in India; nor when it

does occur is it in any proportion to the violence and danger of the disease. In several cases that ended in large and deep-seated ulcerations, it never took place; while it was common in others that were only slight and easily removed.

With regard to the cure, whenever the disease came on with a considerable degree of fever, and with acute and constant pain in the side and shoulder, moderate bleeding was practised, and sometimes removed the inflammation entirely. In other cases, and after bleeding had been had recourse to, mercury was the remedy chiefly relied upon; the use of which was generally prefaced by gentle evacuations.

The title of the next section is *Bilious Diseases*. To this head belongs what is here called the *bilious fever and flux*, which the author considers as depending wholly upon a vitiated state of the biliary secretion, 'occasioning disorder in the stomach and rest of the alimentary canal, and giving rise to a putrescent fermentation, which produces an acrimony sufficient to *kindle up* fever.' The author's pathology here appears rather obscure; and he seems to have taken what is merely an effect for a cause. The indication of cure was derived from the hypothesis before formed respecting the nature of the disease: it consisted solely in the use of evacuants. Bloodletting was scarcely thought of: indeed our author seems to have imbibed, or rather probably carried with him, an invincible prejudice against drawing blood—"The state of the pulse," he says, "never seemed to indicate the necessity of letting blood. This was a remedy almost unknown with us; nor do I recollect ever to have wet a lancet in India, except in some cases of acute hepatitis, or on account of

some external injury." The prejudice of the author against bloodletting, probably prevented the trial of this potent remedy in the spasmodic cholera above described, the fatality of which well warranted such an experiment. It is well known, that in hot climates the indication for this evacuation is not to be found in the state of the pulse, the depression of which is often the strongest reason to employ it.

The author sets up a distinction between ordinary dysentery, and the disease which has been called by this name by Dr. Macgregor and other writers on Indian diseases, which last is here considered as rather a bilious or hepatic flux than proper dysentery, not being attended with indurated fæces, or scybala, but with copious bilious discharges. Mercury, too, which is the sovereign remedy in the latter case, the author supposes to be scarcely applicable in true dysentery, at least not in the quantities usually prescribed in the hepatic flux. Another point of distinction is, that the dysentery, as described by the writers on Indian diseases, was never contagious, which true dysentery is. Indeed, the author doubts whether any disease in India be contagious, with the exception of the exanthemata which appear to be so in every climate.

Some observations follow on the bilious diseases of Europe, among which are enumerated the bowel complaints of infants—with what propriety we are unable to discern; but it seems to be with practitioners returning from tropical climates as with the jaundiced of old—*lurida præterea fiunt quæcunque tuentur.*

Ulcers and Hospital Sores next engage the

author's attention. The malignant character of these is ascribed to the state of the atmosphere or the peculiarity of the climate, and not, as has been commonly done of late, to the vitiated air of the hospital. A scorbutic diathesis he also supposes to have had its share in producing the evil in question. 'That the influence of the climate, and state of the air, was sometimes connected with these depravations, we had undoubted proof at the setting in of the north-east monsoon, on the 14th October 1782, when almost every stump, sore, and ulcer in the hospital, got foul, and put on a bad appearance; while in the cool and dry weather that succeeded about the middle of November; and during the month of December, those all got better; and more of them were healed up within the last month, than ever happened during any other period. Similar changes were observed to take place on other occasions, when the alteration in the state of the weather was not at all remarkable; but never to any thing near the same degree as in this.'

The directions with regard to the treatment of these ill-conditioned sores, and the general management of the patients, are minute and instructive, but do not admit of abridgment. Bark, the author says, did so little good in these sort of cases, that it was laid aside altogether. And he expresses his doubts, whether in India it ever bettered the condition of any sore. In two cases of ulcer of this kind in the foot, opium seemed to have a good effect in stopping the course of the gangrene, but in many of the larger sores it produced no effect at all. Camphor was tried internally, and did good in several instances.

Cases of tetanus were uncommonly frequent in

the Madras Hospital in the year 1783, and almost every one terminated fatally, to the amount of forty or fifty or more. The account, though melancholy as to the general result, is highly interesting in the narration.

‘ It seemed to be all one,’ the author says, ‘ whether the tetanus arose from amputations, or from severe lacerated wounds, or from those that were exceedingly slight, and in a clean and healthy state; or whether such wounds were in the fleshy parts, or among those that were tendinous; the disease almost uniformly proved fatal. None recovered who were attacked, except one; and in this one, the affection was slight, and confined to the muscles of the lower jaw. It came on in this case from a bruise on the first joint of a finger. The finger was taken off, and the disease was soon removed. About this time also a similar slight case came under my care in the *Medea* frigate, from a hurt or bruise, with fracture of the os nasi, and was removed by opium. It was quite another kind of disease in all the cases at the hospital, except the one mentioned. It began with pain and stiffness in the muscles of the lower jaw, but I never saw the jaw at any time so rigidly closed, as to prevent the introduction of liquids from the point of a spoon. The teeth could always be opened about a quarter of an inch or more, by a little forcing. A great degree of stiffness, rigidity, and spasm of the muscles of the affected member soon succeeded with opisthotonos and affection of the muscles of the neck and back, so that they lay rigidly stretched out at their full length. There was a peculiar shining watery look of the patient’s eye, oppression of the spirits, and sighing, with a slight degree of fever, but no delirium or insensibility. In this way the sufferers

generally continued for ten or twelve days; sometimes longer, and gradually sunk under the disease, without any change to the last. Some were not attacked till fourteen days after the accident by which tetanus was brought on. Amputation was tried in several cases without effect. The largest doses of opium we could venture on, both given internally, and applied to the sores, and the stiff jaws; camphor, blisters to the jaws and throat, warm and cold bathing and dashing, wine, spirits, the volatile alkali, were all equally unavailing. In one case, full salivation was excited by mercury, with no better success. Not one patient recovered, except in the slight case formerly mentioned; nor did any of our remedies produce the smallest mitigation, or seem to retard even the progress of the disease.'

Some remarks of a practical kind are made on burns from explosion of gunpowder, which, when considerable and extensive, often terminated fatally. The author says he has found no application in the recent state of burns equal to the Carron oil (so called from its general use at the Carron iron works), consisting of equal parts of lime water and linseed oil; giving an opiate in a dose sufficient to abate pain twice a day, with wine and nourishing diet after the fever has abated. He objects to the application of dry powdered chalk to the sores which remain after burns, as advised by some; but the chalk, he observes, may be used with much advantage in another way; thus: apply all round the edges, pledgits dipped in linseed oil, or spread with any soft ointment. Then powder the sore all over, thickly, with finely powdered chalk. Apply over this a piece of rag well wetted in linseed oil, so as to smear and soften

the chalk. This converts it into a sort of soft putty, which comes off perfectly easily, and keeps the fore in a clean and healing condition throughout the cure.

On the subject of fractured cranium, a case is described which shews the similarity of symptoms arising from inflammation of the brain from external injury with those of ordinary fever; tending strongly to confirm the doctrine lately proposed*, that fever consists essentially in inflammation of the brain.—“ The case was a simple fissure of about an inch in length, in the occipital bone. No account being received with the patient, nor wound or hurt being known of, or appearing externally, he had been for some days placed in a fever ward, and treated as under fever, until his messmates gave information that he had received a blow on the head in action. On shaving his head, a puffiness and some discolouring of the teguments was observed on a particular spot; and on making an opening over this place, the fissure of the bone was discovered, with the edges discoloured, but not separated or depressed. The state of stupor in which the patient was, left no doubt of injury to the brain. The trephine was applied over the fissure, and an ounce and a half of purulent matter was discharged, but afforded no relief, and he died in the course of a few days.”

By way of Appendix, there are subjoined to the volume—1st, remarks on some diseases of infants in Scotland—2, on the disease called Cholic

* *Inquiry into the Seat and Nature of Fever:* by Dr. Clutterbuck.

—3, on the diseases at the Naval Hospital at Madras—and, 4, on preserving health in India.

Respecting the first of these, the author advances an hypothesis with more confidence than probability, which is, that the fluxes of infants, so common at the period of teething, 'arise wholly from an acrimony in the secretions from the mouth, the consequence of inflammation induced on the parts, by the rising of the teeth.' With little more appearance of truth, the bowel complaints usually observed on weaning children, and which are commonly, and probably justly, ascribed to the change of diet or to overloading the stomach, are here attributed to exposure to cold. The author, perhaps, is right in his opinion that the modern fashion of case-hardening children, by exposing them to cold air in all seasons and weathers, is carried to a hurtful excess; but there is no reason to suppose that this is particularly done at the time of weaning, and therefore the disorders which arise at this period must originate in another source.

On the subject of Cholera, which has been generally considered as a spasmodic affection of the intestines, our author observes that many cases so called are of a different nature, and depend upon 'the presence of acrimony arising from disordered bile and indigesta in the turns of the duodenum,' a supposition, which, if true, is not at variance with the idea of the disease consisting in spasm, of which the circumstances alluded to are merely occasional causes. The author's fondness for originality carries him so far as to reject the usual division of purgative medicines into the *drastic* or *heating*, and the *cooling* or *lenient*. This division he believes to be quite fanciful, and that, in-

dependent of idiosyncrasies and peculiarities of stomach and habit, they are all very much alike; and that no purgative, in a dose that acts fully, will leave any heating or irritating effects behind it.

The rules laid down for the preservation of health in new comers, in India, are judicious. They consist chiefly in a sparing use of animal food, and in the avoidance of all excess with regard to liquors; but not in a total abstinence from these. New comers, it is observed, ought to be aware that they are in a country where the digestive organs are peculiarly liable to disease, and they ought therefore to diminish considerably both the quantity and richness of their diet. They cannot too soon adopt the regimen of the Europeans who have resided in the climate, and accustom themselves to what are called the native dishes, which consist for the most part of boiled rice, and fruits, highly seasoned with hot aromatics, along with meat stews, and sauces, with but a small proportion of solid animal matter.

Provided every degree of excess, that approaches to intoxication, be avoided, a regulated use of wine and spirituous liquor will be attended with far less injury to health than a full diet of animal food. But any degree of excess in these, which goes the length of producing any disorder in the stomach, or in the process of digestion, will be attended with the same bad effects; and if hard-drinkers be, in Europe, proverbially subject to diseases of the liver, how shall they expect to escape in a country where this is in a manner endemic? A little shrub and water, or Madeira and water, between meals, is useful, and in some measure necessary, to keep up the tone of the

digestive organs, and to supply the waste occasioned by an excessive perspiration. But the *sherbets*, composed of acid and water, and perfumes, are mere *rot-gut* drinks, nor are the English beverages at all worth the price that is paid for them. It is not by acids and coolers that the septic tendency of the climate is to be resisted, so much as by hot and stimulating aromatics; eaten along with the food, and a few glasses of wine or of punch after it. The superabundance of vegetable acid in the stomach and bowels tends rather to injure the business of digestion, than to promote it.

ART. 45. *An Inquiry into the Changes induced on Atmospheric Air by the Germination of Seeds, the Vegetation of Plants, and the Respiration of Animals.* By DANIEL ELLIS.

[Continued from page 232.]

ONE of the two remaining subjects discussed in the present work, is, the source of the carbon in vegetables and animals, by which the changes in the air are effected. Does the carbon, which contributes to the formation of the carbonic acid observed during the processes of germination, vegetation, and respiration, issue directly from the living substance, and unite with the oxygen of the air exterior to it? Or does this oxygen gas previously enter into the seed, plant, or animal, and, combining with their carbon, again escape from them in the form of carbonic acid? The latter supposition, Mr. E. thinks, cannot be admitted, for reasons already stated. It appears from various experiments here cited, that carbon is yielded by seeds during germination, without the agency of oxygen. And the author's opinion is, that carbon, as it exists in seeds, is

capable of being so acted on or dissolved by the imbibed water (moisture being in all cases necessary to germination) as to be capable of passing off from the seed with its exhaled moisture, which thus becomes the proper vehicle of it. That carbon is actually soluble in water is proved by the experiment of Hassenfratz on dunghill water; for this, when evaporated, constantly left behind a residuum of charcoal.

If any cause obstruct the emission of this water and carbon, germination is either partially or wholly prevented; as when seeds are smeared over with oil or varnish. So with regard to plants, if the upper or exhaling surface of leaves be smeared over with oil or varnish, the leaf dies, and little or no change is effected by it on the surrounding air; i. e. no carbonic acid is produced. Leaves when detached from the stem likewise produce no change on atmospheric air. This last fact, in conjunction with the former, seems to shew that the emission of carbon is the effect of a living process; that it is in fact a true vegetable secretion, dependent, like others, on the due circulation of the fluids of the plant, and varying as that circulation varies.

With regard to cold-blooded animals the experiments of the author and others prove that the carbon which decomposes the air is in every case furnished by the animal, and that its emission depends wholly on the state of the circulating fluids; for, as the circulation increased, so likewise did the emission of carbon, and consequently production of carbonic acid. 'Does then,' the author asks, 'this emission of carbon proceed from the fluids circulating in the larger vessels of the animal? Or is it given out from the exhalent

structure of the body? That these fluids may contain carbon as a constituent element, we do not mean to deny: but, that this substance can be emitted through that organized structure which carries on the respiratory function, may, we think, be justly disputed. This structure has been shewn to embrace a large portion of the surface of the bodies of insects, which again is occupied only by the terminations of exhalent vessels, whose office it is to emit fluids, previously separated from the blood, while the blood itself usually circulates in the deeper seated vessels, or even at the centre of the animal. When also the usual changes on the air are suspended, by placing the animal in a cold medium, the carbon might be expected to accumulate in the blood, if that were the source from which it is directly derived, and carbonic acid to be at that time most abundantly produced: but the preceding facts evince, that it is not to the supposed accumulation of this substance in the blood, but to the state and vigour of the circulating fluids, that the production of this acid is to be ascribed. We have therefore no proof that carbon exists in the mass of blood in a state capable of attracting air, or of being attracted by it through the organized structure of the animal: nor even if these attractions were allowed to take place, do the phenomena at all correspond with what, under such a supposition, ought to happen.

‘ If, then, the carbon in question be not emitted from the blood while yet in the larger vessels, nor after it has ceased to be in motion, it must be given out by that fluid while in circulation, and after it has entered into the minuter vessels: and thus it becomes an animal excretion, derived, like other excretions, from the blood, and emitted,

like them, by some appropriate structure from the surface of the body. Hence any cause, as cold, checking the circulation, restrains the production of this carbon; or, although the circulation be not checked, the emission of this substance is prevented by smearing the bodies of insects over with unctuous matter, which in consequence causes their death. All that has now been said of insects and snails, applies equally to the marmot and other torpid animals; for the emission of carbon in all is obedient to the same laws, except that, in the former case, it is given out by the exhalent surface of the body, while, in the latter, it proceeds from the exhalent structure of the lungs. For these reasons, we consider the emission of carbon in these animals to be truly an excretion dependent on the due circulation of their blood, and partaking of all its variations.'

In the last place, the author inquires whence issues the carbon which unites with the oxygen gas of the air to form carbonic acid in the respiration of man and other warm-blooded animals. For the most part this carbon has been supposed to be derived from the venal blood, either in the course of its transmission through the pulmonary vessels of the lungs, or during its circulation through the capillaries of the system; and to the presence of this substance in the blood, the black colour of this fluid has been attributed, while its redness has been ascribed to the escape of the same principle. But the loss of the black colour of the blood may be owing, the author says, to the acquisition, rather than to the escape, of some colouring matter; or it may arise from some change in the properties of the blood, which shall vary its power of

digestive organs, and to supply the waste occasioned by an excessive perspiration. But the *sherbets*, composed of acid and water, and perfumes, are mere *rot-gut* drinks, nor are the English beverages at all worth the price that is paid for them. It is not by acids and coolers that the septic tendency of the climate is to be resisted, so much as by hot and stimulating aromatics; eaten along with the food, and a few glasses of wine or of punch after it. The superabundance of vegetable acid in the stomach and bowels tends rather to injure the business of digestion, than to promote it.

ART. 45. *An Inquiry into the Changes induced on Atmospheric Air by the Germination of Seeds, the Vegetation of Plants, and the Respiration of Animals.* By DANIEL ELLIS.

[Continued from page 232.]

ONE of the two remaining subjects discussed in the present work, is, the source of the carbon in vegetables and animals, by which the changes in the air are effected. Does the carbon, which contributes to the formation of the carbonic acid observed during the processes of germination, vegetation, and respiration, issue directly from the living substance, and unite with the oxygen of the air exterior to it? Or does this oxygen gas previously enter into the seed, plant, or animal, and, combining with their carbon, again escape from them in the form of carbonic acid? The latter supposition, Mr. E. thinks, cannot be admitted, for reasons already stated. It appears from various experiments here cited, that carbon is yielded by seeds during germination, without the agency of oxygen. And the author's opinion is, that carbon, as it exists in seeds, is

capable of being so acted on or dissolved by the imbibed water (moisture being in all cases necessary to germination) as to be capable of passing off from the seed with its exhaled moisture, which thus becomes the proper vehicle of it. That carbon is actually soluble in water is proved by the experiment of Hassenfratz on dunghill water; for this, when evaporated, constantly left behind a residuum of charcoal.

If any cause obstruct the emission of this water and carbon, germination is either partially or wholly prevented; as when seeds are smeared over with oil or varnish. So with regard to plants, if the upper or exhaling surface of leaves be smeared over with oil or varnish, the leaf dies, and little or no change is effected by it on the surrounding air; i. e. no carbonic acid is produced. Leaves when detached from the stem likewise produce no change on atmospheric air. This last fact, in conjunction with the former, seems to shew that the emission of carbon is the effect of a living process; that it is in fact a true vegetable secretion, dependent, like others, on the due circulation of the fluids of the plant, and varying as that circulation varies.

With regard to cold-blooded animals the experiments of the author and others prove that the carbon which decomposes the air is in every case furnished by the animal, and that its emission depends wholly on the state of the circulating fluids; for, as the circulation increased, so likewise did the emission of carbon, and consequently production of carbonic acid. 'Does then,' the author asks, 'this emission of carbon proceed from the fluids circulating in the larger vessels of the animal? Or is it given out from the exhalent

sume that none is able to be carried on through the cells and blood-vessels of the lungs. Not only is the cellular surface of the lungs furnished with absorbent and exhalent vessels like that of the skin, but it is supplied from within by the same blood, and exposed from without to the same atmospheric air. It has been shewn also, that the colourless fluids of various animals are able to effect the same change on the air, as that which is produced by the blood: and that the serum of the blood itself (which is especially destined to supply the exhalent function) produces on the air the same identical change as it experiences in the lungs: all which circumstances strongly incline us to suppose, that the function of the lungs resembles in kind that of the skin. The proofs likewise already adduced, that the carbon furnished by vegetables, and by the inferior animals, as well those which respire by the skin as those which breathe by lungs, depends wholly on the due circulation of their fluids, and is, consequently, the result of a living action, are strong presumptive evidence, that the same law obtains in the superior animals, and in man: and seem to authorise the conclusion, that the carbon supplied in human respiration is truly an animal excretion, carried on by the exhalent vessels of the lungs; and therefore, that it primarily depends, like other excretions, on the due circulation and distribution of the blood, and is more or less affected by all its variations*.

* Long since this opinion concerning the source of the carbon furnished in animal respiration was entertained by the author, his friend Dr. Nugent has pointed out to him a passage in a French writer, wherein a similar notion is distinctly stated. The author, M. Caron, in opposing the opinion of Dr. Goodwyn concerning the entrance of oxygen gas into the blood-vessels, and the emission of carbonic acid from them, has these words: " Je vais demander ici

Respecting the ulterior source of the carbon thus expended, Mr. E. observes that, in seeds, carbon forms a considerable part of their substance, and, during the whole period of germination, its proportion is constantly diminishing, by uniting with the oxygen gas of the air. But before this supply is exhausted, roots are sent off from the seeds into the earth, by which it draws in nutritious matter, a large proportion of which is considered to be carbon. In animals, the supply of carbon is taken in with their food, and carried into the system by the organs of digestion, assimilation, and nutrition.

The last object of investigation is the phenomena which arise from the changes induced on the air by the living functions of animals and vegetables. The chief of these phenomena is the heat observed in all cases to accompany the processes of germination, vegetation, and animal action. The primary source of this heat is sufficiently obvious in the conversion of oxygen gas into carbonic acid,

à nos chymistes modernes, si, pour qu'il se forme de l'air fixé dans la respiration, il ne suffit pas que l'air vital puisse se charger, se fouler de l'humeur qui sort des vaisseaux exhalans des poumons: pour moi, je crois que cet effet peut s'opérer tout bonnement de cette manière, sans que l'air vital communique en quelque chose avec le sang: Je suis d'autant plus fondé à le croire, que Goodwyn, ainsi que tous les chymistes modernes, avouent qu'ils ne connoissent pas encore la route que l'oxygène peut prendre pour y parvenir, ni par quelle vertu il peut agir sur lui." In a subsequent paragraph also, he asks, whether instead of saying, with Goodwyn, that a certain quantity of oxygen gas is separated from the inspired air in the lungs by respiration, and a certain quantity of carbonic acid substituted in its place, it would not be better to say:—"Une certaine quantité de gaz oxygène constituant l'air atmosphérique, se charge dans les poumons d'une certaine quantité de l'humeur de la respiration, qui le métamorphose, et en change tellement la nature, que l'oxygène n'est plus reconnoissable, et qu'il est devenu d'acide carbonique*."

* Recherches Critiques, par J. C. F. Caron, p. 29. 51. an. 1798.

the specific caloric of the latter being very little more than one-third of that which the oxygen gas itself previously contained. Seeds while vegetating, and plants during their life and growth, possess a temperature independent of the surrounding medium, as ascertained by the thermometer: and the same is true of the cold-blooded animals. Further, it is found that the contact of atmospheric air, or of oxygen, is essential to the production of the heat. This production of heat does not depend directly upon the motion of the blood, because it likewise belongs to animals which have no circulation; neither can it be said to depend on the nervous system, for it is found in animals which have neither brain nor nerves. It clearly depends, in the author's opinion, upon the conversion of oxygen gas into carbonic acid, a conversion which, we have seen, is common to all classes of living beings, vegetable as well as animal, during the continuance of the living action.

The mode of production of heat in the higher classes of animals is a problem which has scarcely yet been satisfactorily solved. It may be safely held, the author thinks, that in the lungs of animals, sufficient air is decomposed to furnish the necessary quantity of heat to the system; and from the fact, that the temperature of all animals is in proportion to the relative capacity which their respiratory organs bear to the body, and to the quantity of air which they breathe in a given time, it seems fair to conclude, that animal temperature is derived chiefly if not entirely from this source alone. The objection made by Dr. Cullen to this opinion, of the lungs being the focus of animal heat,—namely, that if true, the tempera-

giving the statements returned to them from the public Institutions established for the very purpose of investigating the merits of vaccination, than by publishing the Reports of the different Colleges, who, as all the world knows, know nothing of the practice in their corporate capacities, while as individuals they are precisely that description of the faculty which have little or nothing to do with the business. Of what value, for example, can be the report of the Edinburgh College, who set out by avowing "that they have but
" little opportunity themselves of making obser-
" vations on vaccination, as that practice is
" entirely conducted by surgeon-apothecaries and
" other medical practitioners not of their College"—or what can be thought of the report of the Surgeons Company of London, who state "that
" in the enumeration of cases in which small-pox
" has succeeded vaccination, they have included
" none but those in which the subject was vacci-
" nated by the surgeon reporting the facts?"—Is then, it may be asked, the man in whose practice a failure has occurred, the most likely to be forward in communicating it? Is it not rather probable he would remain silent on the subject, and thus avoid laying himself open to the charge of ignorance or negligence, which he knows to have been so liberally bestowed in these cases? According to all the rules of evidence, the testimony of two should be stronger than that of one individual, and especially when this individual has an evident interest in suppressing a fact that might subject him to illiberal remarks.

It has been urged in favour of the College, that their report was framed upon the evidence transmitted to them, and that they had nothing

to do with the authenticity or quality of the facts presented to them. If they had acted upon this principle, they undoubtedly ought to have stated the adverse evidence, that the public might have drawn their own conclusion. But in reality the College have been prodigal of their opinions, while they seem studiously to have kept back the facts upon which they were founded. The adverse evidence, in particular, has been treated by them as undeserving of notice, though a considerable part of it was furnished by the public Institutions especially engaged in the practice, and whose registers testify to the correctness of their reports.

The observations of the College have a tendency to induce a belief in the public, that the failures are few in point of number, and furnished by persons deficient in information, or who have wilfully misrepresented them; persons, “whom “they found,” says the report, “without experience in vaccination, supporting their opinions “by hearsay information and hypothetical reasoning; and, upon investigating the facts which “they advanced, they (the College) found them “to be either misapprehended, or misrepresented; “or that they fell under the description of cases “of imperfect small-pox, before noticed.”

Are, then, the fifty-six cases of failure reported by the College of Surgeons (and which by their own confession do not include the whole that were transmitted to them) to be considered as of this description? Are such, the failures recorded in the registers of the Vaccine Institution and the Small-pox Hospital, and which, from recent experience, seem to be only the prelude to much more of a similar kind? Were these, we say, misappre-

hended or misrepresented? If so, to whom are we to trust for accurate or faithful reports, or on whom can the public rely?

Admitting what the College states to be true, in many instances—"that where the small-pox "has succeeded vaccination, the disease has varied "much from its ordinary course; that it has "neither been the same in the violence nor in the "duration of its symptoms, but has, with very "few exceptions, been remarkably mild, as if the "small-pox had been deprived, by the previous "vaccine disease, of all its usual malignity,"—it is not true universally, perhaps not even generally, and that probably for a certain length of time only. The *Kensington* case proved fatal; the *Adam Street* case proved fatal; two cases described in the latter part of the present Journal proved fatal; the *Fulwood's Rents* cases were severe and dangerous, as were a great many others that have been recorded, and which rest upon unquestionable grounds. In fact, there are all the varieties and gradations observable in the small-pox itself independent of vaccination; evincing what Dr. Jenner himself allows, that there are all the different degrees of insusceptibility wrought by vaccination; and if there are gradations of insusceptibility, it is natural to expect that this may be influenced by time, as well as by the other trivial circumstances enumerated by Dr. Jenner, such as tetters, scald head, sore ears, matter taken at too late a period, &c.; which look more like props to a falling building, than as causes capable of producing such important changes as it has been alleged they do.

But the College, in their wisdom, say, "the

“opinion that vaccination affords but a temporary security, is supported by no analogy in nature, nor by the facts which have hitherto occurred.”—Was ever any thing so gross as this? Are not persons found to be insusceptible of small-pox at one period, who take it at another? Are the College ignorant that small-pox may be suspended by the measles; and that persons recovering from a fever are for a time insusceptible of contagion? What are these, but instances of temporary insusceptibility? With regard to such an idea “not being supported by the facts which have hitherto occurred,” the College betray gross ignorance of the subject. They ought to have known that, according to the relation of many of the best established failures, the patients had been, in the interval of the two diseases, exposed repeatedly to the contagion of small-pox, both natural and artificial, without effect. One of the cases, in particular, from which Dr. Woodville deduced the security of vaccination, as having resisted the variolous test by inoculation, is among the failures which at present stand uncontroverted*.

Such are the reflections that have occurred to us on the perusal of the College Report—a Report which, we aver, is not fairly deducible from the facts, and which has a tendency to mislead the public mind, and to lull them into a false and dangerous security. “Vaccination,” the College say, “is now well understood, and its characters accurately described†;” and yet fail-

* See the Table of the Small-pox Hospital subjoined.

† With strange inconsistency, it is remarked but three lines before, that “the practice of vaccination is but of eight years standing, and its promoters, as well as opponents, must keep in mind; that a period so short is too limited to ascertain every point, or to bring the art to that perfection of which it may be capable.”

ures are daily occurring, perhaps in greater number than at any former period. What is the inference? Why, that the causes upon which security or insecurity depends are not at all known; and that whoever undertakes, in the present state of our knowledge, to give security by vaccination, offers that which he has no means of insuring, and consequently leads his patient into a dangerous and possibly fatal error.

We shall here close our remarks for the present, and call our readers' attention to the subjoined statement and correspondence.

“ CORRESPONDENCE WITH DR. HERVEY, REGISTER OF THE ROYAL COLLEGE OF PHYSICIANS.

“ No. I. *Copy of a printed Letter from Dr. Hervey to Dr. Adams, Physician to the Small-pox Hospital.*

“ Sir,

“ His Majesty has been graciously pleased, in compliance with an address from the honourable House of Commons, to direct his Royal College of Physicians of London to enquire into the present state of vaccination in the United Kingdoms, to report their observations and opinions upon that practice, upon the evidence adduced in its support, and upon the causes which have hitherto retarded its general adoption.

“ The College are now engaged in the investigation of these several propositions, and request you to communicate to them the result of your experience and enquiries on the subject, that they

may be thereby assisted in making their report as perfect as possible.

“ I am, Sir, your most obedient servant,

“ JAMES HERVEY, *Register.*

“ By order of the Royal College of
Physicians, Oct. 23, 1806.”

“ No. II. *Copy of a Letter from Dr. Joseph Adams, to Dr. Hervey, of the College of Physicians.*

“ *Berners Street, 17th November, 1806.*

“ Sir,

“ I HAVE been honoured with your circular expressing the wish of the Royal College of Physicians to comply with his Majesty's gracious command, relative to cow-pox.

“ The College are pleased to expect a communication on the three following points:

“ 1st, My own experience in vaccination.

“ 2dly, The result of my enquiries.

“ 3dly, My opinion of the causes which have hitherto prevented its general adoption.

“ 1st, My own experience fully confirms all that *Dr. Jenner* promised in his Enquiry into the Causes and Effects of Cow-pox.

“ 2dly, I have made no digest of my enquiries excepting as they lead to experiment, which are consequently included in the former answer.

“ 3dly, Besides the prudent backwardness of most in admitting novelties into practice without ample proof of their utility, the causes which have prevented the general adoption of vaccination appear to me to have been principally the *mistaken zeal of its friends*. It could not be expected that men who value themselves on their talents at investigation, and feel conscious of their scrupulous

adherence to truth, could patiently submit to be uncandidly treated for a scepticism induced by events however accidental. When their accuracy was questioned, whilst they disregarded the assertions of their accusers, they became diligent in collecting collateral evidence; and when their reasoning was ridiculed, instead of expressing only their doubts, they became parties in their own defence.

“ Another inconvenience has arisen from a too great forwardness at answering objections before they were sufficiently matured; hence when variola appeared after vaccination, the event was either denied or explained by *so many minute causes as were sufficient to frighten the ignorant, disgust the candid, and induce the prudent to avoid an experiment the result of which was not sufficiently understood.*

“ A practice at one time represented as so simple that the clergy and females were invited to undertake it, became at once so mysterious that only a chosen few were said to *understand* vaccination; every untoward event was imputed to *ignorance between the true and spurious pustule, to taking matter at too late a period, and to other causes still less satisfactory.*

“ *Had these uncertainties really existed, they would have been sufficient objections against a practice the object of which is to secure the subject from a formidable disease, and from which he might be secured by another, certainly less desirable, but well-ascertained, operation.* But the truth is, that vaccination is as simple as it was at first announced; that the true character of its vesicle is more certain than the local effect of any other morbid poison; that it is impossible to confound it with a pustule of any kind; and that

every difficulty might have been avoided by requiring a correct register of the progress from the period of insertion to cicatrization, or for the most part of perfect scabbing.

“ I am, Sir, your obedient humble servant,

(Signed)

“ JOSEPH ADAMS.

“ *Dr. James Hervey, &c. &c.*

“ No. III. *Copy of a Letter from Dr. Hervey.*

“ *College of Physicians, January 15th, 1807.*

“ Sir,

“ THE committee of the Royal College appointed to enquire into vaccination, request you to favour them with the evidence which the registers of the Small-pox Hospital afford upon that subject; and that you will address your communication to me at the college.

“ I am, Sir, your most obedient humble servant,

(Signed)

“ JAMES HERVEY, *Register.*

“ *To Dr. Adams.*”

"No. IV. (in answer to the above.)

"PERSONS VACCINATED AT THE SMALL-POX HOSPITAL AT PANCRA9, FROM JANUARY 21, 1799, TO JANUARY 1, 1807. TWENTY THOUSAND THREE HUNDRED AND TWENTY-THREE.

It appears that out of the above Number the following have taken the casual Small-pox, two of whom have died.

Name of Patient, and place of residence when vaccinated	Aged	Time of Vaccination.	When caught the Small-pox, and Place of Residence.	By whom seen at the time of Small-pox.
Hodges, Nancy, (registered Ann), Fulwood Rents.	11 months.	Oct. 1st, 1800	Sept. 1804, Fulwood Rents.	By a very great number of Physicians and other medical Gentlemen, who published their names.
Hodges, Mary, Fulwood Rents.	9 months.	May 17th, 1802	Sept. 1804, Fulwood Rents.	By a very great number of Physicians and other Medical Gentlemen, who published their names.
Clarke, Elizabeth, Red-Lion Square.	3 months.	May 21st, 1800	Sept. 1st, 1804, in Coppice Row, Clerkenwell.	Dr. Willan, Messrs. Wachfel, Ring, White of Clerkenwell, and several medical Gentlemen.
Bainbridge, Thomas, Beaumont Street, Manglebone.	3 months.	Feb. 24th, 1800	March 1805, Adam Street, Edgware Road. Note, this case proved fatal.	Drs. Adams, Croft, Henry Frazer, Mr. Wachfel, and others of the profession.
Bainbridge, Harriot, 17, Adam Street, Edgware Road.	5 months.	Oct. 11th, 1802	March 1805, Adam Street, Edgware Road.	Drs. Adams, Croft, H. Frazer, many other Physicians, and medical Gentlemen.

X x

Name of Patient, and place of residence when vaccinated.	Aged	Time of Vaccination	When caught the small-pox and Place of Residence.	By whom seen at the time of Small-pox.
Hart, Mary, 17, Adam Street, Edge-ware Road.	10 months.	Oct. 11th, 1802	March 1805.	Drs. Adams, Croft, H. Frazer, many other Physicians and medical Gentlemen.
East, James, Chapel Row, Kings.	4 months	May 9th, 1803	November 1806.	Mr. Savage, apothecary in the neighbourhood, and who had then inoculated the sister, from whom the mother supposes he caught the small-pox.
Carpenter, Eliz. 20, Chapel Street, Holywell Mount.	4 months.	May 3d, 1800	May 1805, Royton Street, Islington Road.	Was brought to the hospital with the small-pox, which she caught from her sister who was inoculated.
Beattie, Diana, Turn Street, Berkeley Square.	5 months.	July 1st, 1799, tested with small-pox matter July 22d.	June 1805, Great Barlow Street, Marylebone, lately recovered from Scarlatina.	Drs. Hooper, Adams, Mr. Wachfel, and several medical Gentlemen. Note. Dr. Hooper took matter to inoculate.
Jones, M. Ann, No. 9, Lambeth Wall.	4 months.	Oct. 18th, 1800	Sept. 1805, Theobald's Road.	Drs. Willan, Adams, Messrs. Wachfel, Ring, Simpson, and several Gentlemen.
Mazoyer, Eliz. (re-gittered Nazoyer), Grafton Street, Soho.	18 months.	May 10th, 1802	Sept. 1805, Grafton Street, Soho.	Dr. Coombe, who reported to Mr. Wachfel that this child died of a malignant confluent small-pox, the worst sort he ever saw.

Name of Patient, and place of residence when vaccinated.	Aged.	Time of Vaccination.	When caught the Small-pox, and Place of Residence.	By whom seen at the time of Small-pox.
Morgan, William, Kirkman's Buildings, Tottenham Court Road.	3 months.	April 20th, 1803	Sept. 1805.	Reported by the mother, who says that the disease went through very quickly, and was seen by several medical Gentlemen.
Thomas Dorman, No. 28, Monmouth Street, Seven Dials.	8 months.	May 23d, 1804	Oct. 1805.	Brought to the hospital in a state of recovery from the small-pox, by Mr. Hodges.
Barrell, Prudence, 16, Tottenham Place.	6 months.	Sept. 22d, 1800	Oct. 1805, Tottenham Place.	Messrs. Ring, Wachfel, Roberts, and several gentlemen in the neighbourhood.
Gordon, Sarah, Tottenham Place.	13 months.	April 7th, 1802	Nov. 1805, Tottenham Place.	Reported by several women, who attended with their children to be inoculated in consequence.
Butt, Georgina, Halifax, Elizabeth, No. 3, Brady's Passage, Camden Town.	4 months. 6 months.	Sept. 19th, 1803	March 1806.	Dr. George Pearson, who reported the cases to Dr. Adams and Mr. Wachfel.
Gould, Mary, No. 7, Little Titchfield Street, Marylebone.	8 months.	April 17th, 1804	March 1805.	By several women, who attended with their children to be inoculated with small-pox in consequence.

“ At the first introduction of vaccination, a general terror prevailed of fore arms, which induced the physician to apply remedies whenever the appearances were at all severe. There is reason to believe that these applications were injurious, as we have had no trouble with the arms for these last three or four years. The only case of eruption that has been at all troublesome, was — Smith, who has been seen by several persons, and by Mr. Croft, who referred the mother to the Small-pox Hospital. The complaint ended in a scabby head, which proved tedious, but gradually mended; and as the woman has not applied for some time, we suppose the child is now well—Another case is reported with some obscurity in the Medical and Chirurgical Review, vol. xiii, Miscel. page lvii and cxv.

(Signed) “ JOSEPH ADAMS, *Physician to the Hospitals.*
 “ JOHN CHRISTIAN WACHSEL, *Apothecary.*

“ *To Dr. James Hervey, Royal College of Physicians.*

“ Since the above was collected, the following cases have occurred. Thomas Peppall, aged six years, Britannia Street, Gray's Inn Lane, vaccinated at the Inoculation Hospital four years ago, has two cicatrices. On the 14th of July 1807, brought to the hospital with the small-pox, being the sixth day of disease, and fourth of the eruption, seen by Dr. Adams and Mr. Wachfel.

“ Ann Zelterguist, aged three years and eight months, Upper Fitzroy Street, vaccinated at the Inoculation Hospital, April 16th, 1804, caught the small-pox August the 1st, was seen on the 7th of August, has four hundred pustules of the distinct kind, hard, indented, circumscribed, maturated; fever continued till this morning. Mr. Wachfel dissected one of the pustules, and exhibited the characteristic slough to Mr. Draper.”

Two other failures are related, the particulars of which we are compelled to omit for want of room.

Miscellaneous.

AUGUST 1807.

Report of the Royal College of Physicians of London, on Vaccination.

THE Royal College of Physicians of London, having received his Majesty's commands, in compliance with an Address from the House of Commons, "to inquire into the state of vaccine inoculation in the United Kingdom, to report their opinion and observations upon that practice, upon the evidence which has been adduced in its support, and upon the causes which have hitherto retarded its general adoption;" have applied themselves diligently to the business referred to them.

Deeply impressed with the importance of an inquiry which equally involves the lives of individuals, and the public prosperity, they have made every exertion to investigate the subject fully and impartially. In aid of the knowledge and experience of the members of their own body, they have applied separately to each of the Licentiates of the College; they have corresponded with the Colleges of Physicians of Dublin and Edinburgh; with the Colleges of Surgeons of London, Edinburgh, and Dublin; they have called upon the societies established for vaccination, for an account of their practice, to what extent it has been carried on, and what has been the result of their experience; and they have, by public notice, invited individuals to contribute whatever information they had severally collected. They have in consequence been furnished with a mass of evidence communicated with the greatest readiness and candour, which enables them to speak with confidence upon all the principal points referred to them.

1. During eight years which have elapsed since Dr. Jenner made his discovery public, the progress of vaccination

has been rapid, not only in all parts of the United Kingdom, but in every quarter of the civilized world. In the British Islands some hundred thousands have been vaccinated; in our possessions in the East Indies upwards of 800,000; and among the nations of Europe the practice has become general. Professional men have submitted it to the fairest trials, and the public have, for the most part, received it without prejudice. A few indeed have stood forth the adversaries of vaccination, on the same grounds as their predecessors who opposed the inoculation for the small-pox, falsely led by hypothetical reasoning in the investigation of a subject which must be supported, or rejected, upon facts and observation only. With these few exceptions, the testimony in favour of vaccination has been most strong and satisfactory, and the practice of it, though it has received a check in some quarters, appears still to be upon the increase in most parts of the United Kingdom.

2. The College of Physicians, in giving their observations and opinions on the practice of vaccination, think it right to premise, that they advance nothing but what is supported by the multiplied and unequivocal evidence which has been brought before them, and they have not considered any facts as proved but what have been stated from actual observation.

Vaccination appears to be in general perfectly safe; the instances to the contrary being extremely rare. The disease excited by it is slight, and seldom prevents those under it from following their ordinary occupations. It has been communicated with safety to pregnant women, to children during dentition, and in their earliest infancy; in all which respects it possesses material advantages over inoculation for the small-pox; which, though productive of a disease generally mild, yet sometimes occasions alarming symptoms, and is in a few cases fatal.

The security derived from vaccination against the small-pox, if not absolutely perfect, is as nearly so as can perhaps be expected from any human discovery; for amongst several hundred thousand cases, with the results of which the College have been made acquainted, the number of alledged failures has been surprizingly small, so much so, as to form certainly no reasonable objection to the general adoption of vaccination; for it appears that there are not nearly so many failures, in a given number of vaccinated persons, as there are deaths in an equal number

of persons inoculated for the small-pox. Nothing can more clearly demonstrate the superiority of vaccination over the inoculation of the small-pox, than this consideration; and it is a most important fact, which has been confirmed in the course of this inquiry, that in almost every case, where the small-pox has succeeded vaccination, whether by inoculation or by casual infection, the disease has varied much from its ordinary course; it has neither been the same in the violence nor in the duration of its symptoms, but has, with very few exceptions, been remarkably mild, as if the small-pox had been deprived, by the previous vaccine disease, of all its usual malignity.

The testimonies before the College of Physicians are very decided in declaring that vaccination does less mischief to the constitution, and less frequently gives rise to other diseases, than the small-pox, either natural or inoculated.

The College feel themselves called upon to state this strongly, because it has been objected to vaccination, that it produces new, unheard-of, and monstrous diseases. Of such assertions no proofs have been produced, and, after diligent inquiry, the College believe them to have been either the inventions of designing or the mistakes of ignorant men. In these respects then, in its mildness, its safety, and its consequences, the individual may look for the peculiar advantages of vaccination. The benefits which flow from it to society are infinitely more considerable: it spreads no infection, and can be communicated only by inoculation. It is from a consideration of the pernicious effects of the small-pox, that the real value of vaccination is to be estimated. The natural small-pox has been supposed to destroy a sixth part of all whom it attacks; and that even by inoculation, where that has been general in parishes and towns, about one in 300 has usually died. It is not sufficiently known, or not adverted to, that nearly one-tenth, some years more than one-tenth, of the whole mortality in London, is occasioned by the small-pox; and however beneficial the inoculation of the small-pox may have been to individuals, it appears to have kept up a constant source of contagion, which has been the means of increasing the number of deaths by what is called the natural disease. It cannot be doubted that this mischief has been extended by the inconsiderate manner in which great

numbers of persons, even since the introduction of vaccination, are still every year inoculated with the small-pox; and afterwards required to attend two or three times a week at the place of inoculation, through every stage of their illness.

From this, then, the public are to expect the great and uncontroverted superiority of vaccination; that it communicates no casual infection; and, while it is a protection to the individual, it is not prejudicial to the public.

3. The College of Physicians, in reporting their observations and opinions on the evidence adduced in support of vaccination; feel themselves authorised to state that a body of evidence so large, so temperate, and so consistent, was perhaps never before collected upon any medical question. A discovery so novel; and to which there was nothing analogous known in nature, though resting on the experimental observations of the inventor, was at first received with diffidence: it was not, however, difficult for others to repeat his experiments, by which the truth of his observations was confirmed, and the doubts of the cautious were gradually dispelled by extensive experience. At the commencement of the practice, almost all that were vaccinated were afterwards submitted to the inoculation of the small-pox; many underwent this operation a second and even a third time, and the uniform success of these trials quickly bred confidence in the new discovery. But the evidence of the security derived from vaccination against the small-pox does not rest alone upon those who afterwards underwent variolous inoculation, although amounting to many thousands; for it appears from numerous observations communicated to the College, that those who have been vaccinated are equally secure against the contagion of epidemic small-pox. Towns indeed, and districts of the country, in which vaccination had been general, have afterwards had the small-pox prevalent on all sides of them without suffering from the contagion. There are also in the evidence a few examples of epidemic small-pox having been subdued by a general vaccination. It will not, therefore, appear extraordinary that many who have communicated their observations should state, that though at first they thought unfavourably of the practice, experience had now removed all their doubts.

It has been already mentioned, that the evidence is not universally favourable, although it is in truth nearly so, for there are a few who entertain sentiments differing widely from those of the great majority of their brethren. The College, therefore, deemed it their duty, in a particular manner, to enquire upon what grounds and evidence the opposers of vaccination rested their opinions. From personal examination; as well as from their writings, they endeavoured to learn the full extent and weight of their objections. They found them without experience in vaccination, supporting their opinions by hearsay information, and hypothetical reasoning, and, upon investigating the facts which they advanced, they found them to be either misapprehended or misrepresented; or that they fell under the description of cases of imperfect small-pox, before noticed, and which the College have endeavoured fairly to appreciate.

The practice of vaccination is but of eight years standing, and its promoters, as well as opponents, must keep in mind, that a period so short is too limited to ascertain every point, or to bring the art to that perfection of which it may be capable. The truth of this will readily be admitted by those acquainted with the history of inoculation for the small-pox. Vaccination is now, however, well understood, and its character accurately described. Some deviations from the usual course have occasionally occurred, which the author of the practice has called spurious cow-pox, by which the public have been misled, as if there were a true and false cow-pox; but it appears that nothing more was meant than to express irregularity or difference from that common form and progress of the vaccine pustule from which its efficacy is inferred. Those who perform vaccination ought therefore to be well instructed, and should have watched with the greatest care the regular progress of the pustule, and learnt the most proper time for taking the matter. There is little doubt that some of the failures are to be imputed to the inexperience of the early vaccinators, and it is not unreasonable to expect that farther observation will yet suggest many improvements that will reduce the number of anomalous cases, and furnish the means of determining, with greater precision, when the vaccine disease has been effectually received.

Though the College of Physicians have confined them-

selves in estimating the evidence to such facts as have occurred in their own country, because the accuracy of them could best be ascertained, they cannot be insensible to the confirmation these receive from the reports of the successful introduction of vaccination, not only into every part of Europe, but throughout the vast continents of Asia and America.

4. Several causes have had a partial operation in retarding the general adoption of vaccination; some writers have greatly undervalued the security it affords, while others have considered it to be of a temporary nature only; but if any reliance is to be placed on the statements which have been laid before the College, its power of protecting the human body from the small-pox, though not perfect indeed, is abundantly sufficient to recommend it to the prudent and dispassionate, especially as the small-pox, in the few instances where it has subsequently occurred, has been generally mild and transient. The opinion that vaccination affords but a temporary security is supported by no analogy in nature, nor by the facts which have hitherto occurred. Although the experience of vaccine inoculation be only of a few years, yet the same disease, contracted by the milkers of cows, in some districts has been long enough known to ascertain that in them at least the unsusceptibility of the small-pox contagion does not wear out by time. Another cause is the charge against vaccination of producing various new diseases of frightful and monstrous appearance.

Representations of some of these have been exhibited in prints in a way to alarm the feelings of parents, and to infuse dread and apprehension into the minds of the uninformed. Publications with such representations have been widely circulated, and though they originate either in gross ignorance, or wilful misrepresentation, yet have they lessened the confidence of many, particularly of the lower classes, in vaccination; no permanent effects, however, in retarding the progress of vaccination, need be apprehended from such causes, for, as soon as the public shall view them coolly and without surprise, they will excite contempt and not fear.

Though the College of Physicians are of opinion that the progress of vaccination has been retarded in a few places by the above causes, yet they conceive that its gene-

ral adoption has been prevented by causes far more powerful, and of a nature wholly different. The lower orders of society can hardly be induced to adopt precautions against evils which may be at a distance; nor can it be expected from them, if these precautions are attended with expence. Unless, therefore, from the immediate dread of epidemic small-pox, neither vaccination nor inoculation appear at any time to have been general, and when the cause of terror has passed by, the public have relapsed again into a state of indifference and apathy, and the salutary practice has come to a stand. It is not easy to suggest a remedy for an evil so deeply imprinted in human nature. To inform and instruct the public mind may do much, and it will probably be found that the progress of vaccination in different parts of the United Kingdom will be in proportion to that instruction. Were encouragement given to vaccination, by offering it to the poorer classes without expence, there is little doubt but it would in time supersede the inoculation for the small-pox, and thereby various sources of variolous infection would be cut off; but till vaccination becomes general, it will be impossible to prevent the constant recurrence of the natural small-pox by means of those who are inoculated, except it should appear proper to the legislature to adopt, in its wisdom, some measure by which those who still, from terror or prejudice, prefer the small-pox to the vaccine disease, may, in thus consulting the gratification of their own feelings, be prevented from doing mischief to their neighbours.

From the whole of the above considerations, the College of Physicians feel it their duty strongly to recommend the practice of vaccination. They have been led to this conclusion by no preconceived opinion, but by the most unbiassed judgment, formed from an irresistible weight of evidence which has been laid before them. For when the number, the respectability, the disinterestedness, and the extensive experience of its advocates, is compared with the feeble and imperfect testimonies of its few opposers; and when it is considered that many, who were once adverse to vaccination, have been convinced by further trials, and are now to be ranked among its warmest supporters, the truth seems to be established as firmly as the nature of such a question admits; so that the College of Physicians conceive that the public may reasonably look forward with

some degree of hope to the time when all opposition shall cease, and the general concurrence of mankind shall at length be able to put an end to the ravages at least, if not to the existence, of the small-pox.

LUCAS PEPYS, President.

Royal College of Physicians,
10th April, 1807.

JAMES HERVEY, Registrar.

APPENDIX.

No. I is the Report of the College of Physicians of Dublin on the state of vaccination in Ireland, in reply to the College of London. This was given in a former number of our Review, to which therefore we refer*.

No. II.

Physicians Hall, Edinburgh, 26th Nov. 1806.

Gentlemen,

THE Royal College of Physicians of Edinburgh have but little opportunity themselves of making observations on vaccination, as that practice is entirely conducted by surgeon apothecaries and other medical practitioners not of their College, and as the effects produced by it are so inconsiderable and slight, that the aid of a physician is never required.

The College know that in Edinburgh it is universally approved of by the profession, and by the higher and middle ranks of the community, and that it has been much more generally adopted by the lower orders of the people than ever the inoculation for small-pox was, and they believe the same to obtain all over Scotland.

With regard to any causes which have hitherto prevented its general adoption, they are acquainted with none, except the negligence or ignorance of parents among the common people, or their mistaken ideas of the impropriety or criminality of being accessory to the production of any disease among their children, or the difficulty or impossibility, in some of our country districts, of procuring vaccine matter, or a proper person to inoculate.

* See page 275 of our last volume.

The evidence in favour of vaccination appeared to the Royal College of Physicians of Edinburgh so strong and decisive, that in May last, they spontaneously and unanimously elected Dr. Jenner an Honorary Fellow of their College;—a mark of distinction which they very rarely confer, and which they confine almost exclusively to Foreign Physicians of the first eminence.

They did this with a view to publish their opinion with regard to vaccination, and in testimony of their conviction of the immense benefits which have been, and which will in future be derived to the world, from inoculation for the cow-pox, and as a mark of their sense of Dr. Jenner's very great merits and ability in introducing and promoting this invaluable practice.

I have the honour to be, Gentlemen,

Your most obedient humble servant,

TH. SPENS, C.R.M. Ed. Pr.

To the Royal College
of Physicians of London.

No. III.

The Report of the Board of Curators of the Royal College of Surgeons of London, on the subject of Vaccination, referred to them by the Court, on the 21st day of November 1806; made to the Court of Assistants on the 17th of March 1807, and adopted by them.

The Court of Assistants having received a Letter from the Royal College of Physicians of London, addressed to this College, stating, That his Majesty had been graciously pleased, in compliance with an address from the Honourable House of Commons, to direct his Royal College of Physicians of London to enquire into the state of vaccination in the United Kingdom, to report their observations and opinion upon that practice, upon the evidence adduced in its support, and upon the causes which have hitherto retarded its general adoption; that the College were then engaged in the investigation of the several propositions thus referred to them, and requesting this College to co-operate and communicate with them in order that the Report thereupon might be made as complete as possible:

And having, on the 21st day of November last, referred

such letter to the consideration of the Board of Curators, with authority to take such steps respecting the contents thereof as they should judge proper, and report their proceedings thereon, from time to time, to the Court:—The Board proceeded with all possible dispatch to the consideration of the subject.

The Board being of opinion that it would be proper to address circular letters to the Members of this College, with a view of collecting evidence, they submitted to the consideration of the Court, holden on the 15th day of December last, the drafts of such letter as appeared to them best calculated to answer that end; and the same having been approved by the Court, they caused copies thereof to be sent to all the Members of the College in the United Kingdom, whose residence could be ascertained, in the following form; viz.

“ Sir,

“ The Royal College of Surgeons being desirous to co-operate with the Royal College of Physicians of London, in obtaining information respecting vaccination, submit to you the following questions, to which the favour of your answer is requested.

“ By order of the Court of Assistants,

“ OKEY BELFOUR, Secretary.

“ Lincoln’s-Inn Fields,

Dec. 15, 1806.”

“ 1st. How many persons have you vaccinated?

“ 2d. Have any of your patients had the small-pox after vaccination? In the case of every such occurrence, at what period was the vaccine matter taken from the vesicle? How was it preserved? How long before it was inserted? What was the appearance of the inflammation? And what the interval between vaccination and the variolous eruption?

“ 3d. Have any bad effects occurred in your experience in consequence of vaccination? And if so, what were they?

“ 4th. Is the practice of vaccination increasing or decreasing in your neighbourhood? If decreasing, to what cause do you impute it?”

To such letters the Board have received 426 answers; and the following are the results of their investigation:

The number of persons stated in such letters to have been vaccinated, is 154,381.

The number of cases in which small-pox had followed vaccination is 56.

The Board think it proper to remark under this head, that in the enumeration of cases in which small-pox has succeeded vaccination, they have included none but those in which the subject was vaccinated by the surgeon reporting the facts.

The bad consequences which have arisen from vaccination are, eruptions of the skin in 66 cases, and inflammation of the arm in 24 instances, of which three proved fatal.

Vaccination, in the greater number of counties from which Reports have been received, appears to be increasing; it may be proper however to remark, that, in the metropolis, it is on the decrease.

The principal reasons assigned for the decrease are,

Imperfect vaccination,—Instances of small-pox after vaccination,—Supposed bad consequences,—Publications against the practice,—Popular prejudices.

No. IV.

Edinburgh, March 3d, 1807.

Sir,

I mentioned in my former letter, that I would take the earliest opportunity of laying before the Royal College of Surgeons of Edinburgh, the communication with which the Royal College of Physicians of London had honoured them, on the 23d of October last.

I am now directed by the Royal College to send the following answer on that important subject.

The practice of vaccine inoculation, both in private, and at the vaccine institution established here in 1801, is increasing so rapidly, that for two or three years past, the small-pox has been reckoned rather a rare occurrence, even amongst the lower orders of the inhabitants of this city, unless in some particular quarters about twelve months ago; and, among the higher ranks of the inhabitants, the disease is unknown.

The Members of the Royal College of Surgeons have much pleasure in reporting, That, as far as their experience goes, they have no doubt of the permanent security against the small-pox which is produced by the constitutional af-

fection of the cow-pox ; and that such has hitherto been their success in vaccination, as also to gain for it the confidence of the public, inasmuch that they have not been required, for some years past, to inoculate any person with small-pox who had not previously undergone the inoculation with the cow-pox.

The Members of the Royal College have met with no occurrence in their practice of cow-pox inoculation which could operate in their minds to its disadvantage, and they beg leave particularly to notice, that they have seen no instance of obstinate eruptions or of new and dangerous diseases, which they could attribute to the introduction among mankind of this mild preventive of small-pox. The Royal College of Surgeons know of no causes which have hitherto retarded the adoption of vaccine inoculation here; on the contrary, the practice has become general within this city : and from many thousand packets of vaccine matter having been sent by the Members of the Royal College, and the vaccine institution here, to all parts of the country, the Royal College have reason to believe that the practice has been as generally adopted throughout this part of the United Kingdom as could have been expected from the distance of some parts of the country from proper medical assistance, and other circumstances of that nature.

I have the honour to be, Sir,

Your most obedient servant,

WILLIAM FARQUHARSON,
President of the Royal College and Incorporation of Surgeons of Edinburgh.

No. V.

*At a Meeting of the Royal College of Surgeons in Ireland
holden at their Theatre, on Tuesday the 13th of January
1807,*

Francis M'Evoy, Esq. President ;

Mr. Johnson reported from the Committee, to whom was referred a letter from the College of Physicians, London, relative to the present state of vaccination in the United Kingdom, &c. &c. that they met and came to the following Resolutions:

That it appears to this Committee, That inoculation with vaccine infection is now very generally adopted by the sur-

gical practitioners in this part of the United Kingdom, as a preventive of small-pox.

That it appears to this Committee, That from the 25th day of March 1800 to the 25th of November 1806, 11,504 persons have been inoculated with vaccine infection at the Dispensary for Infant Poor, and 2,831 at the cow-pox institution, making a total of 14,335, exclusive of the number inoculated at hospitals and other places, where no registry is made and preserved.

That it is the opinion of this Committee, That the cow-pox has been found to be a mild disease, and rarely attended with danger, or any alarming symptoms; and that the few cases of small-pox which have occurred in this country, after supposed vaccination, have been satisfactorily proved to have arisen from accidental circumstances, and cannot be attributed to the want of efficacy in the genuine vaccine infection as a preventive of small-pox.

That it is the opinion of this Committee, That the causes which have hitherto retarded the more general adoption of vaccination in Ireland, have, in a great measure, proceeded from the prejudices of the lower classes of the people, and the interest of some irregular practitioners.

To which Report the College agreed.

Extract from the Minutes,

JAMES HENTHORN, Secretary.

On the Blood of Persons affected with the Jaundice.

M. DEYEUX, a Parisian chemist, has made several experiments which seem to shew, that the yellow tinge the serum of the blood exhibits in jaundice is not owing, as commonly supposed, to the presence of proper bile in the blood-vessels. The serum in this state, has neither, he says, the odour nor the taste of bile; nor is alcohol, by being digested on it, impregnated with any degree of bitterness. It is remarkable, that the crassamentum, in the cases examined by M. Deyeux, was not reddened in the usual manner by exposure to air; nor did the serum coagulate by the application of heat.

Extract of a Letter from Dr. Rogers, of St. Petersburg, to a Physician in London.

“ Dear Sir,

“ THE Medical Reform you mention to be in contemplation in England, though confined to few particulars, I esteem as greatly interesting.

“ In answer to your first medical question, I have to remark that pulmonary diseases, generally considered, are by no means so frequent as in England; but when they do happen their consequences are much to be dreaded as ending more commonly fatal: so that it may be said phthisis pulmonalis is a frequent disease in Russia, and seldom cured. Notwithstanding its ordinary fatality, I think I have seen some cases of recovery from what I apprehended to be, and which I am inclined to think you or any other experienced physician would have believed to have been confirmed cases, especially in females, about fourteen or fifteen years of age—these might have led to believe them to be the effects of *molimina naturæ*; and probably so they might have been; yet those young women were restored to health without the *catamenia* appearing. I have seen some men, too, cured, either by art or the *vis medicatrix naturæ*, I will not presume to say which, whom I suspected far advanced in the disorder.

“ I think, as I always did, that pulmonary consumption is contagious, yet not from slight exposure, but only when cohabitation, or close contact, has associated the parties, very long, in a circumscribed space. I have seen many instances, contributing to confirm my opinion; and no longer ago than last year, witnessed the death of a father, mother, and daughter, within a few months of each other, who had lived together in a small house, assisting one another alternately, during their illness. That it is sometimes hereditary I have no hesitation in declaring my opinion, believing to have seen it run through whole families, and that not unfrequently, without any visible accidental cause, but such inheritance I apprehended to arise from scrophulous family affection. As to prevention, that is a matter so little thought of, that no precautionary means, I suspect, have ever been taken for that purpose. I know no description of people peculiarly liable to the disease in question: every one is subject to it from accidental occurrences; but if any more than others are to be found ill of

consumption, they are the labouring people; especially in the winter season, when from hard work, exciting perspiration, they retire to kabacks, (brandy shops) get intoxicated, and then plunge into the open air, in the most intense degrees of cold. The disorder amongst the politer circles of Russian inhabitants I imagine takes place, for the most part, from going out of their domestic chambers, inordinately heated, suddenly into the outward atmosphere, when Fahrenheit's scale frequently marks more than twenty degrees below zero. But as the time of passing from their doors to their carriages is almost instantaneous, they are unconscious of the possibility of any harm happening. But I remember, when a pupil to that eminent professor Dr. George Fordyce, to have heard him often say, that the sudden exposure to cold, and not the long duration in it, was the most common cause of illness.

“ Another cause of consumption, of the same complexion, but more prominent in its features, takes place in going from the ball room. The Russians in this country, as well as foreigners, are remarkably fond of dancing; for which purpose opportunities, both public and private, are continually offering. And it is in the dancing room that many victims lay the foundation of pulmonary diseases: particularly in cold weather; when, from violent exercise overheated, they set down for a few minutes to cool themselves, as they call it; and then step into the air to enter their carriages, sometimes chariots, sometimes open sledges, in any degree of cold it may chance to be: an imprudence almost incredible. I am told that consumptions are much more frequent at Moscow than any where else in the Russian empire. The general mode of treatment in this country I believe to be nearly the same as in England, except, perhaps, that a much greater quantity of lichen islandicus, a favourite remedy, is used than with you; but I do not know if with that success its reputation claims. I have used it many times without having much to say in its favour.

“ I think I have seen good effects produced by the foxglove, if not so far as to perfect a cure, at least manifestly to mitigate the severity of the symptoms of the disease. My method of giving it is with sugar of milk, beginning with a few drops of the saturated tincture rubbed together with two drams of the sugar, and taken in cold tea, in-

creasing the drops gradually twice a day, till nausea ensues; and if by that time they do not seem to benefit the patient, I leave them off. By these means I am pretty sure I have done service, and when I have suspected tubercles to be formed in the lungs, I have seen the aconitum extract have apparently very advantageous effects. Very few causes of the disorder in question have been detected from dissections, as they are very rarely performed in this country, being almost always objected to from the superstitious obstinacy of its inhabitants.

“ I am pretty well persuaded that rheumatism, both acute and chronic, is as frequent in Russia as in England; indeed it is one of the diseases not esteemed contagious, most prevalent in the Northern parts of the Russian dominions, and I could not help admiring at a question proposed by Dr. Reid, in the thirteenth volume of the Medical and Physical Journal, ‘ How can it be explained that rheumatism, catarrh, and phthisis pulmonalis, do not more prevail in Russia?’ God knows we have enough of all of them! they bearing in general pretty nearly the same proportion to other disorders as those do which you will find in the copy of the last report sent to me from the Marine Hospital in this city, which copy I herewith send. It is not the custom now, as formerly, to attend much to the state of the weather in this place, and of late years not at all to the quantity of rain that falls, so that on that particular I have been obliged to refer you to observations made some years ago. Now I think I have in part answered all the questions you proposed to me, conscious at the same time how much they must fall short of your desire and expectation; but I could wish you to be with me if only for one week, and then I am sure I should have no necessity to offer any excuse for deficiencies or irregularities in this letter.

“ Your sincere friend and obliged humble servant,

“ J. ROGERS.

“ St. Petersburg,
April 7, 1807.”

Conspectus ægrorum nosocomii marini petropolitani, tam ingressorum, quam egressorum, mortuorum, & remanentium, cum denominatione morborum, a 1^{ma} Martis ad 1^{am} Aprilis 1807 anni.

Dies.	Ingressi.	Egressi.	Mortui.	Remanentes.	Morbi mortuorum.	Morbi remaneutium.	Summa remaneutium.
1	24	4		771			
2	26	20	2	775	Typho 1. Febri Lenta 1.	Asthmate	21
3	24	18	2	779	— 1. Hydrope 1.	Angina	4
4	28	9	2	796	Diarrh. col. 1. Typh. 1.	Contusione	41
5	37	18	1	814	Typho 1.	Debilitate post var. morb.	52
6	21	21	2	812	— 1. Phthisi 1.	Diarrhœa	28
7	33	15		830		Epilepsia	5
8	18	21	3	824	Typho 2. Hydrope 1.	Febribus intermittentib.	7
9	20	27	2	815	— 1. Feb. lent. 1.	— lentis	3
10	11	16		810		— hectic	4
11	23	26		812		Hydrope	13
12	14	24	3	799	Typh. 1. Phthisi 2.	Lue venerea	109
13	27	15	1	810	— 1.	Morbi oculor. asthenici	21
14	18	28	2	798	— 1. ——— 1.	Obstructione viscerum	32
15	33	17	1	813	Phthisi 1.	Phthisi	10
16	23	14	2	820	— 2.	Prolapsu intestin. rect.	4
17	20	24	1	815	Typho 1.	Paralyfi	9
18	29	17	3	824	Diarrhœa coll. 2. Typh. 1.	Rheumatalgia	96
19	27	11	1	839	Phthisi 1.	Scorbuto	44
20	28	13	2	852	Typho 1. Febr. hectic. 1.	Scabie	21
21	24	22		854		Syncho	73
22	27	25		856		Tinea capitis	1
23	13	19	1	849	Phthisi 1.	Typho	51
24	15	26	3	835	Hydrope 1. Diarrh. coll. 2.	Ulceribus variis	151
25	9	15	2	827	— 1. ——— 1.	Hæmorrhoidibus fluent.	3
26	30	20	2	833	Typh. 1. Febr. hectica 1.		
27	30	13	3	849	Hydrope 2. Diarrh. coll. 1.		
28	28	13	2	862	Typho 1. ——— 1.		
29	18	14	1	865	Febri hectica 1.		
30	11	45	1	830	Typho 1,		
31	18	45		803			
	712	615	45				803

MEDICAL REFORM.

LIST OF SUBSCRIBERS CONTINUED,

Amount of subscriptions already announced...	85 0 0	Dr. Mackintosh, Col- chester, second sub- scription.....	1 1 0
<i>Subscribed at the annual meeting of the Stilton Medical Society:</i>		Dr. Handy, Chelmsford	1 1 0
Dr. Alvy, St. Neots, Pre- sident.....	1 1 0	Mr. Green, Colchester..	1 1 0
Mr. F. Hopkinson, Peter- borough.....	1 1 0	Mr. Pilbrick,....do...	1 1 0
Mr. Vise, Stilton.....	1 1 0	Mr. Pearson, Dunmow..	1 1 0
Mr. Michael, Stamford.	1 1 0	Mr. Lynch,....do....	1 1 0
Mr. Smith, Ramsey....	1 1 0	Mr. Clarence,..do....	1 1 0
Mr. Oliver, Stilton.....	1 1 0	Mr. Cardwardine, do...	1 1 0
Mr. Clapham, Thorney.	1 1 0	Mr. Seymour, Castle Hedingham	1 1 0
Dr. Skrimshire, Peter- borough (visitor)....	1 1 0	Mr. Holdich, Little Wal- tham	1 1 0
<i>Subscribed at the annual meeting of the Essex and Herts Benefit Medical Society:</i>		Mr. Cribb, Bishop Stort- ford	1 1 0
		Mr. Caldwell, Omagh, Ireland.....	1 1 0
		Mr. Howard, Hull.....	1 1 0
		Mr. Boyce, Tullamore, Ireland.....	1 1 0

TO THE EDITORS OF THE MED. AND CHIR. REV.

Horncastle, July 19, 1807.

Gentlemen,

THE following printed questions and answers having been lately sent to me, I request a place for them in your valuable Review. They are, altogether, I think, highly worthy of attention.

I have the honour to be, &c. &c.

EDWARD HARRISON.

THE Heads of Houses in the University of Cambridge having determined that no man who had practised any trade or profession could qualify for a degree in medicine, grounding their determination on the statute, *de Studiosis Medicinæ*, the Professor of Anatomy asked for an interpretation of the whole of the statute, and the following is the printed paper on this occasion.

“ In consequence of some doubts respecting the statutable qualifications of candidates for medical degrees, the following questions were proposed to the Heads of Houses by a Member of the Caput, and the following answers were returned :

“ The Heads having determined, in their interpretation of the Stat. de Stud. Med., that no person can be admitted a candidate for the degree of Bachelor in Physic who has been habitually engaged in the practice of any trade or profession—

“ *Quest.* 1. What is meant by the words *habitually engaged*, &c.?

“ *Ans.* Our interpretation does not seem to want anything further. (a)

“ *Quest.* 2. May a man in Statu Pupillari be at all engaged in the practice of physic or surgery, within the time prescribed by the statute, or not?

“ *Ans.* There being no particular case before us, it is a rule not to interfere. (b)

“ *Quest.* 3. In the statute, cap. 15, it is said, ‘ ejus Lectionis auditor assiduus; Anatomias duas videat* ;’ Does the statute require any lectures to be heard?

“ *Ans.* The statute is sufficiently clear. (c)

“ *Quest.* 4. If ‘ Anatomias duas’ means two dissections, who is to make them? and where are they to be seen?

“ *Ans.* The statutes are silent†. (d)

“ The Vice-Chancellor and Heads of Colleges are moreover most humbly solicited to determine what exercises are necessary to be performed by the candidate for a Bachelor of Physic’s Degree, and to make a decree accordingly.

“ To this request no answer was returned.”

(a) Does *habitually* mean six years, five years, three years, or only term time?

(b) Mr. Cope’s case (who had been an Inspector of Hospitals) had three times been before them for discussion on the request of the Professor of Physic; nor would they admit him, till Dr. Davy assured them that an Inspector of Hospitals was similar to a house-visitor at any hospital.

(c) Clear enough! The statutes require the Professor to give lectures four times per week. Sir J. Pennington has never given one.

(d) The silent statutes require the Professor of Physic to make at least one dissection every year: this Sir J. P. has never done.

* Vide Stat. Book, p. 227, 228.

† Vide Stat. p. 377, 385.

Thoughts on the Regulation of the Medical Profession:
by Mr. Geoghegan, Surgeon, of Dublin.

THAT society at large must derive the most important advantages from a well regulated system of medical jurisprudence, is obvious; but it is to be lamented that many difficulties present themselves in giving effect to so desirable an object. The laudable jealousy of the British laws, as to the rights of individuals, renders it necessary to use legislative interference with peculiar delicacy. To prevent the public consulting, respecting their health, whomsoever they think proper, would be impracticable; and to prevent a person offering relief in cases of disease, where regular advice had proved ineffectual, would be a grievance. On this ground, a direct law to prohibit quackery might be rejected, and endanger the scheme. Under these circumstances, it is presumed, that all that can be expected from legislation, is to legalize the regular practitioner, and to discountenance every other by every possible means. In furtherance of such a measure, it is of the first consequence to engage the public feeling, which can only be done, by convincing them that the regular practitioner has a superior claim on their confidence. Here it may be material to observe, that in as much as public confidence is weakened in the regular practitioner, in so much will the irregular be encouraged: hence the necessity of insisting that the former should excel in his profession, and that genuine science should be fixed as the grand barrier to preclude imposition, and to characterize the regular practitioner. Experience having abundantly shewn, that examination alone is an insufficient test of professional qualification, and that opportunities of acquiring information, elementary and practical, are essential, it becomes necessary to enforce, that a system of education should be pursued, calculated to ensure substantial acquirements.—With respect to education, so intimately connected are the branches, physic and surgery, and such the reciprocity between them, that students designed for either department should pursue the same elementary studies. As to time, it is presumed that five years would be sufficient, the two first confined to the elementary parts, in which they should be examined; and if approved, then commence pupils in practice, and attend during three years the pub-

lic and private practice of a physician or surgeon, who had been ten years at least a practitioner; after which they should be examined in practice solely, three several days. The professors would be the best adapted to the first examination; practitioners of ten years experience to the latter. This plan of instruction and examination, allotting distinct periods to distinct studies, and the appointment of examiners, the most conversant in each respectively, affords full opportunity of acquiring, and of proving superior qualification. The public observing that every regular practitioner performs duties which entitle him to confidence, will estimate him accordingly; whereas at present they undervalue all, from the facility of obtaining degrees, degrading the medical character.

With respect to legalizing the practitioner, it might be effected, by securing to him* exclusively all the emoluments arising from professional duties, and by exclusively rendering him eligible to situations, and attaching heavy penalties on all persons designating themselves practitioners, without authority. Universities and corporations might be suffered to retain the powers which they possess, save and except that they should require the fulfilment of the conditions as to education and examination. Pharmacy being essential to giving efficacy to physic and surgery, the qualification of the apothecary should be insisted on; which might be effected by obliging him to submit to examination in botany and chemistry, by the professors of those sciences, previous to his being examined in pharmacy at Apothecary's Hall. The shops should be examined four times a year at least by physicians, who should have salaries for discharging that duty.

TO THE EDITOR OF THE MED. AND CHIR. REV.

Sir,

I AM not aware that the acetate of lead has been ever employed or suggested as a remedy for the hooping cough: if it have, you will of course suppress this communication.

* It is presumed, that as the proposed regulations do not interfere with the chartered bodies, and tend to dignify and improve every department of medical science, and are to be prospective, that they will meet the concurrence of the faculty at large.

The disease appearing in my own family with unusual violence, and resisting the common remedies of emetic and nauseating doses of ipecacuan and tartarized antimony, full doses of cicuta, asafœtida, oil of amber, &c. &c. I resolved on giving the acetate of lead a trial, in consequence of having found it a most valuable medicine in abating the cough and quieting the hectic symptoms attendant on phthisis pulmonalis. I commenced by giving to a child of four years old a teaspoonful of the following mixture every six hours:

R. Plumbi acetati gr. v
Syr. Violæ ʒij
Aq. Rosæ ʒij.

The cough being on the following day less frequent and violent, and the stomach or bowels not deranged by the medicine, I directed the dose to be increased to two teaspoonfuls every six hours. After the first dose the child was not heard to hoop, and after two days more the cough entirely ceased. The child's general health, which for some time had been bad, was evidently improved by it.

The result of this experiment induced me to give it to my youngest child, and several others in the neighbourhood, in which it proved so successful, that I really consider it a specific in those cases, and therefore am desirous to recommend it to the attention of practitioners, through the medium of your very valuable and justly esteemed Review. I have also found this preparation to succeed in a violent acute spasmodic affection, and in a case of mania hysterica in a young lady of eighteen years of age. I attribute its salutary effects in these cases to its power in diminishing excitability.

I am Sir,

Your very obedient servant,

R. REECE.

Henrietta Street, July 24, 1807.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

COPENHAGEN. M. *Frydenberg*, a physician residing in Iceland, has lately transmitted to the Society of Rural Economy of Copenhagen, a memoir, requested from him

by the Society, with regard to the possibility of converting to alimentary uses the *seetang*, a marine plant that abounds in the seas which wash the coasts of Iceland, as well the other possessions of Denmark in the North. M. Frydenberg proposes, in fact, to realize this idea; and should he succeed, he will have enriched his country with a new and important branch of industry, and secured, in some measure, the subsistence of the inhabitants of Iceland; a country exceedingly barren in articles of food, and which all the precautions of Government are often unable to preserve from famine. Hitherto the *seetang* has only served in Denmark for fuel, and in Norway for the preparation of soda.

A bust of the celebrated professor *Tode*, who died a few years since, is about to be placed in the Anatomical Theatre of Copenhagen. The reputation of M. Tode was almost as great in poetry as in physic.

HEIDELBERG. During the visit of Dr. Gall in the beginning of the present year, at Heidelberg, the ordinary residence of Professor Ackermann, who ranks among the most formidable of Dr. Gall's adversaries, a sort of public challenge and trial of strength took place between those two anatomists, in which both displayed proofs of courage and ability, but which, as usual, left the quarrel just where it began; neither party being convinced by the arguments of his antagonist, Dr. Gall was the first to enter the lists; explaining his doctrine fully, and answering the objections that had been made to it by Professor Ackermann. The next day Professor A. appeared in his turn, furnished, like his antagonist, with his justificatory pieces, that is to say, anatomical preparations, upon which he grounded all his arguments.

A spectator of this curious combat speaks very highly of the art with which Dr. Gall rendered his lecture intelligible to all capacities, interspersing it with anecdotes that enlivened the subject, and excited the greatest attention in his hearers. He found in his discourse what the Doctor's physiognomy led him to expect, namely, a considerable degree of sagacity and discernment, but without depth; a spirit of observation, without philosophy; an extensive and accurate memory, without a speculative genius. On

the other hand, the observer remarked in the discourse of Professor Ackermann, order, conciseness, energy, philosophy founded in observation; a severe logic, and a tone rather magisterial, as of a man who was sure of his ground: at the same time, the observer could not but admit that the Professor generally soared above the comprehension of the majority of his auditors, seeming to address himself almost exclusively to men of science. In other respects, our informant adds, this polemical scene was conducted with all that dignity which might be expected from literary disputants, but which unfortunately is not always preserved on such occasions.

PARIS. At a late sitting of the Medical Society, M. Fizeau read an account of the Cæsarean operation being performed with success a second time on the same subject; communicated by M. Bacqua, a surgeon of Nantes.

The Medical Society of Emulation have ordered a medal to be struck with the effigy of *Xavier Bichat*, one of its founders, and most distinguished members. This is a well deserved tribute to the memory of a man, whose premature death must be considered as a loss to science, and will serve as a motive of emulation to those that come after him. M. Bichat displayed uncommon abilities in anatomy and physiology; which last he rendered almost a new science, as his excellent Treatise *Sur la Vie et la Mort* will sufficiently evince.

DR. Haygarth, of Bath, has lately invented a *Female Urinal*, extremely well adapted for the use of those patients who, from disease or accident, cannot, on the most necessary occasions, move or be moved from the spot on which they lie. It is recommended at once by its simplicity and cheapness, and is better adapted than any other we have seen to persons debilitated with age or infirmity. It is manufactured in earthen ware by Mr. Josiah Spode, at Stoke-upon-Trent, Staffordshire, and is sold also at his Warehouse, Portugal Street, London.

The House of Commons have just voted 20,000*l* additional to Dr. Jenner, as the Discoverer of the Vaccine Inoculation.

Miscellaneous.

OCTOBER 1807.

On the State of Medical Practice in Germany: by M. Rampont.*

HOSPITALS IN VIENNA.

General Hospital. (Allgemeiner Krankenhaufs.)

THIS edifice, the grandest in Vienna, situated in the center of the suburb of *Alstergasse*, was built in the year 1780, by Joseph II, who was desirous, on the score of œconomy, to reduce all the hospitals to one. It is two stories in height, and has seven courts, some of which are planted with trees, and serve as promenades for the patients. There are one hundred and eleven wards, 26 feet in length by 17 broad, sixty-one of which are appropriated to the men, and forty to the women; with hot and cold baths, and a large and handsome dispensary under the direction of M. Weltz, apothecary-in-chief.

This hospital, which is open to all the sick of the city and suburbs, is not exclusively devoted to the indigent. Persons in tolerably easy circumstances, who wish not to be treated at home, may be here admitted. The patients are divided into four classes. The first class comprehends those that have a chamber and an infirmary to themselves: these are lodged, attended, and boarded, &c. for a florin a day. The second class, a number of which are accommodated in the same room, have, in other respects, all the advantages of the former, and pay only thirty kreutzers a day. The third class comprizes the individuals belonging to certain foundations or public corporations; for each of these the hospital receives the same stipend as they cost

* Extracted from the *Journal Generale de Medecine*. No. cxxii et seq.

the establishment from whence they came. The fourth class, consisting of such as have a certificate of poverty from the curate of the parish, and domestic servants, pay ten kreutzers per day. Each patient has a bed to himself.

‘There is here a very laudable institution, in favour of modest females, who unfortunately become pregnant. It consists of twelve chambers, each of which, at the expense of a florin a day, is furnished with a bed, a table, and a cradle. Any woman with child, married or single, may present herself veiled, and use any name she thinks proper: but she is obliged to give in her real name in a ticket sealed up, which is returned to her unopened on going out. She is taken in at any hour of the night, and may reach the door of the hospital, which opens towards the fields, without a chance of being seen. After her confinement, she leaves her infant at the hospital, or takes it away with her, without being at all known. The sealed ticket is never opened but in case of death, for the purpose of acquainting the relations with it. These women, who pay, besides, four florins for their delivery, must make an addition of twenty-four more, if they wish the child to be left in the hospital.

‘Besides these, there are two other classes of lying-in-women. Those of the second class are placed several in the same ward, and pay three florins for their delivery, thirty kreutzers per day, and twelve florins for the admission of their children into the house. No one enters these wards but the accoucheurs, the midwives, and servants. The women of the third class are those that come with certificates of indigence: they pay ten kreutzers a day, and work for the hospital. They are employed also as nurses to the foundlings, if properly qualified; and then their own children are admitted gratuitously. The eight wards devoted to this class are open to the students in midwifery, and to females learning this art, who are at liberty to enter them for instruction, as often as they wish. All the wards of the two last classes serve for teaching the practice of midwifery, which is confided to Professor Boër. His department is divided into as many rooms as there are sections. Thus there is, first, a general ward for pregnant

women: 2d. Two wards, of five beds each, for delivery; the one for summer, the other for winter: 3d. A ward for those brought to bed: and, 4th. One for such as are seized with any illness during childbed. I was surprised at not finding, among twenty-five or thirty women, any case of puerperal or low fever, although the hospitals of Vienna were crowded at the time, and the hospital fever was very prevalent.

‘The puerperal fever, in other respects, is very rare at Vienna; but when it occurs it is so fatal, that M. Boër (who practises physic as well as midwifery) considers it as a disease generally incurable.

‘M. Boër is a very well informed practitioner, and adopts very much the kind of practice that has been called *expectant*. Like M. May, he almost always leaves the process of delivery to nature, never employs the forceps, and very rarely turns the child [the same is the practice of M. Kaderbauer, professor at Lintz, who has been in practice five and forty years]. He delivers immediately, in cases where the placenta is attached to the cervix of the uterus; but still he leaves the placenta to nature. The partizans of the opposite method, while they allow that the mother is saved by this practice, accuse him of frequently losing the children. I know not how far this reproach is well founded. M. Boër, besides other works, published in 1802 a treatise on Parturition, which contains a complete exposition of his doctrine.

‘The company called the *Fraternal Union of Merchants* have two elegant wards appropriated exclusively to them, in which each patient pays a florin per day.

‘In the center of the first court of the hospital, which is a square of great extent, a regular building is erected, in the first floor of which are situated the clinical wards, recently improved by the elder *Frank*, who at present directs the first *Clinical Institute* at St. Petersburg. I entered, not without veneration, this sanctuary, where the oracles of *De Haen*, *Stoll*, and the elder *Frank*, were formerly used to be delivered—*sed quantum mutatus ab illis!*

‘ There are here two wards, containing twelve beds each ; destined, the one to men the other to women, of all ages and all conditions. These wards are very lofty, and perfectly lighted by large windows, furnished with blinds for shutting out the sun in summer. The beds are spacious ; and an extreme degree of neatness and cleanliness is observed : the care of them devolves upon women. At the head of each bed is hung a black tablet with the following title.

Nomen ortus nativitatis et conditio ægri	Anno Ætatis	DIES		Natura Morbi	Medicus assistans
		Introitus in nosocomio	Morbi		

By the side of this is a printed sheet, upon which is observed ;

Dies Morbi	METHODUS MEDENDI	Diæta
	Remedia Interna Externa	

‘ It is the duty of the *assistant physician* to fill up both these. This is the title given to the advanced students in medicine, who have the charge of the clinical patients (each patient having his own attendant), and who treat them under the eyes of the professor ; they likewise draw up the observations. They are obliged to make two or more visits daily ; and as the professor only attends once, in the morning, they examine the patients that come in in the course of the day. The next morning the professor, at his visit, demands of the *assistant* the genus and species of the disease, the causes, and the proper mode of treatment. The answers and reasons given by the pupil always afford room for explanations and comments from the professor, who confirms or annuls the practice, as he sees occasion. These discussions, which were generally important, and always interesting, while M. *Frank* remained, are at present become for the most part mere disputations, and the occasion of warm contests between the professor and the assistant. I have spoken of the elder *Frank* ; but unfortunately he is at Petersburg ;

it was M. P—— whom I heard: how different from his predecessor!

‘In order to be an *assistant physician*, one must have undergone a rigorous examination. Almost all those that I saw had been pupils of *Frank*, whose memory they cherish, and whom they still regret. Imbued with a doctrine in some sort the opposite of that of M. *Peutl*, it very seldom happens that they agree with him in regard to the treatment; and when this is the case, they oppose him openly.

‘I have seen, for example, a young woman in a gastric fever, with slight symptoms of debility coming on. The *assistant* wished to give the bark, and the students all silently approved of it: the professor was of opinion that the proper moment for its administration was not yet arrived; and he obliged the *assistant* to continue the use of diluting and acidulous drinks. I saw the patient again the next morning, when, the symptoms being more strongly marked, the professor himself now ordered the bark.

‘Another patient had a simple intermittent: the professor wished to begin the cure by evacuates; the *assistant* maintained that they were superfluous, and that *he* should be for beginning with the bark forthwith. As the professor, however, adhered to his first opinion, the pupil said, “Sir, I will give what you desire; but, in the recital of the case, I shall say, that you ordered the use of evacuates in opposition to my opinion.” This, though said in a manner sufficiently respectful, is nevertheless scandalous and disgraceful. The auditory, on these occasions, consists of from seventy to eighty pupils, all of respectable character: in the time of *Frank* they amounted to two hundred.

‘All the clinical discussions are in Latin; and M. *Peutl*, like almost all the German physicians, speaks this language with great facility. I remarked, and I speak it to his praise, (for it is a rare case in Germany), that the formulæ of M. *Peutl* are very simple. The clinical lecture is given from 8 to 9 in the morning; and from 9 to 10, the professor gives a lecture in pathology in the adjoining amphitheatre. M. *Peutl* has joined with him in the clinical department, M. *Hoeger*, who held the same situation along with the two *Franks*, and who has apartments in the hospital.

‘ Clinical surgery is also taught at the General Hospital, by M. *Reinlein*, professor of this branch; and by M. *Kern*, one of the head surgeons, who has been called here within the last two years from Laybac. He lectures in German at the bedside of the patient, and speaks with facility and clearness. He has near a hundred pupils, who attend him with the greatest assiduity. M. *Barbier*, formerly professor at Strasburg, and at present at Val-de-Grâce, extols the use of beets and morels, in the form of cataplasms, for cancers of the breast; others have recommended carrots for the same purpose: M. *Kern* has no confidence in either. When the disease is sufficiently marked, he operates in the schirrous state, without waiting for ulceration. He employs with success, against cancerous ulcers of the face, the caustic of *Rousselot*; and he proscribes in general, in his dressings, plasters and ointments, which he replaces by lint and warm water. M. *Kern* is held in general esteem as a practitioner.

‘ The medical duty of the General Hospital is arranged in five divisions, over each of which presides a first physician (*primerartz*); these again are broken into ten subdivisions, each of which has a physician of the second rank (*seconderartz*)*. Besides these, there are, an internal clinical professor, a chief clinical physician, and a physician director, who is the supreme head of all.

‘ The surgical department is arranged in the following manner: four first-surgeons, eight second-surgeons, and a surgeon-in-chief. The place of surgeon-in-chief was occupied at first by the famous *Brambilla*, and afterwards by M. *Mederer*, who has been dead about two years, and has not yet had a successor appointed.

‘ The director is excused from attending the patients. This employment, which belonged to the elder *Frank*, is assigned at present to M. *Nord*, a man of considerable merit, and who is perhaps the only physician at Vienna who does not

* The General Hospital at Vienna is preferable to the Hotel Dieu of Paris in this respect, that instead of general wards for convalescents as at the Hotel Dieu, in Vienna each subdivision has its own convalescent ward: for it is ridiculous to consign the treatment of convalescent patients to a physician who has never seen them during their illness, and who at most can only learn the name of the disease.

French. He was one of the most distinguished pupils of *Stoll*, and is unquestionably one of the best practitioners of the capital. Unfortunately he has not at present leisure to visit the sick. As I knew that *M. Nord* had been formerly the principal physician at the Great Lunatic Hospital, I requested of him, among other questions I put with regard to maniacs, to inform me whether, in the inspection of the skulls of the patients, he had been able to verify the conjectures of *Dr. Gall*. He answered, smiling, that he had examined many at the solicitation of *Dr. Gall*, but that he could very rarely perceive what that gentleman wished him to see.

‘*M. Nord* employs either the moral or physical treatment of the patients, according to the exigency of the particular case; but most commonly he makes use of both at the same time. He very rarely has recourse to blood-letting in the treatment of this malady.

‘In the General Hospital, as in all the other Hospitals of Vienna, there is a person lives in the house, who, for a certain sum paid by Government, undertakes to board all the patients: this office is generally filled by a *Restaurateur*, who supplies the patients with whatever is wanted in addition to the board, at any price. It is easy to conceive the abuses that may arise from such an institution. When our (the French) soldiers were in this hospital, not content with the allowance ordered by the French surgeons, they invited one another to dinner by turns; and they said, as in camp, “Let us go to the canteen.”

‘There is an anatomical museum in the General Hospital, which, to say the truth, is not in the best order. There are some interesting preparations of embryos, and many pieces of morbid anatomy: among others, I noticed an ovary presenting the form of a bladder, having been distended with dropsy, and dried in this state: its cavity is about two feet in diameter.—Another very large and fleshy, open, the internal surface of which is covered with hair—a larynx, with a false membrane, the consequence of croup—another from a patient who died of *phthisis laryngea*—and another with aphthæ:—the coronary arteries ossified, which is supposed to have caused the

angina pectoris, of which the patient died :—an inflamed spleen—and, lastly, about an ounce and a half of sugar that was extracted by M. *Frank*, junior, from the urine of a diabetic patient.’

[*To be continued.*]

*Efficacy of the Acetate of Lead in Hysteria and Chorea :
by Dr. A. C. Willey, of Block Island, N. A.*

CASE 1. “ A young lady, about 20 years of age, and of a full habit, was seized with an indisposition on the 5th of Jan. 1803, apparently arising from dysmenorrhœa. The disorder daily increasing, terminated in a species of hysteric paroxysms, on the 11th. The paroxysms began their attack with an excruciating pain in the scrobicular region, and, in a few minutes, ended in clonic spasm of the stomach, with a total deprivation of all voluntary motion. This continued from one to eight or ten minutes, interrupted now and then by a convulsive expiration and shrill groan. These symptoms left her in an extremely debilitated state, with constant tendency to swooning. A number of these paroxysms would sometimes follow in quick succession. I combated this disorder for some days with the usual agents, but in vain. The fits increasing in both frequency and force, I resolved upon a trial of the acetate of lead, and accordingly began by giving it in doses of four grains every three hours, formed into pills with an extract prepared from the bark of butter-nut (*juglans cinerea*). To my agreeable surprise, the paroxysms ceased in eight hours from the first exhibition of this remedy. But in order to render the cure more complete, the acetate was continued till 74 grains were taken.”

Case 2. “ On the 20th of Oct. 1804, I was requested to visit a girl about thirteen years of age, and of rather a delicate constitution. I found her labouring under an inflammation of the brain; but by pursuing the usual *modus medendi*, soon relieved her of the disease. In the beginning of January following she began to manifest irregular and convulsive motions of one foot, and presently after of both. On the 24th I was called upon to attend her. She was then labouring under the characteristics of chorea sancti viti. I adopted those remedies which seemed to promise

the most salutary effect, but soon found them totally inefficacious. The disease rapidly increased, while I was vainly trying every medicine which had been used by others with any apparent benefit. Fatuity, injury of speech, and loss of voluntary motion, were striking symptoms. The pains became exquisite, the convulsions alarming, and every exacerbation seemed to threaten immediate death. In this unhappy situation I had recourse to the acetate of lead. I administered it in doses of two grains every two hours. The effect was pleasing. The exacerbations immediately ceased, and the patient appeared to convalesce; but upon suspending the acetate for a short time the exacerbations returned; they, however, again vanished upon resuming its use. By persevering in this remedy, almost every spasmodic symptom was gone in twenty days, and she soon so far recovered as to be able to make a visit into the country. I was particularly careful to preserve a free passage through the intestinal canal by cathartics.

“In the course of the spring she was attacked with the whooping-cough, which was pretty severe. This brought on a continued pain of the head, and a recurrence of the symptoms of chorea. I directed a powder of the root of *myrica cerifera* to be snuffed into the nose three or four times a day, in sufficiency to induce sternutation. This had the desired effect; the pain of the head was relieved, and the spasmodic affections disappeared.”

From *New York, Med. Rep.* No. 35.

The old Age of Boerhaave.

THE particulars of the lives of men who have remarkably distinguished themselves, whether in science, politics, or any other pursuit, never fail to excite interest; but this interest is much heightened, when it relates to their last moments. The name of Boerhaave is justly regarded as among the most illustrious in the annals of modern medicine. After having struggled courageously against poverty in his youth, his talents and fame at length compelled fortune as it were to enlist herself on his side; and it is said, he left to his only daughter a sum little short of two millions of florins. It is curious to enquire, whether the acquisition of so much wealth produced any change

in his taste or occupations: the answer may be collected from a letter which he wrote in Latin in his sixty-seventh year, to his former pupil, *J. B. Bassan*, who was now become physician to the Emperor of Germany, and which is as follows:

“My health,” says he, “is very good. I sleep at my country house, and return to the city at five o’clock in the morning, where I am engaged till six in the evening, in relieving the sick. I attend to chemistry, and amuse myself with reading. I revere, love, and adore God alone. On my return to the country, I visit my plants, and recollect with pleasure, and gratitude, the presents which the liberality of my friend *Bassan* has made me. My garden seems proud of the variety and vigour of its trees. I consume life in contemplating my plants, and grow old in the desire of possessing new ones. Who will give me, I exclaim, the beautiful Bohemian linden tree, with large leaves; or that of Silesia, more wonderful still with its cucullated foliage? Thus, riches serve but to increase the thirst for them, and the avaricious man encroaches upon the liberality of his benefactor. Can you pardon the folly of an old friend, who busies himself in planting trees, the beauty and shade of which will delight only his grandchildren? It is thus my life passes away, with no other chagrin than what arises from your absence: in all other respects I am happy.”—

How much is here said in a few lines! what activity of mind, and zeal for the relief of suffering humanity! What innocence and vivacity in his pleasures; and that at an age when all relish for them has commonly become extinct!

Case of Superfoetation.

THE subject of superfoetation is one of the most obscure in the history of generation. If we except the instance related by Pliny, and which is far from satisfactory, of a female slave who was brought to bed of two children, one of which resembled her master, the other another man; and the well-known case of a woman of New England, who brought forth at one birth a mulatto and a

white child; there is scarcely any decisive proof of the possibility of superfoetation. M. *Delmas*, a surgeon of Rouen in France, has lately published, in the *Annals of Medicine of Montpellier*, a case precisely similar to the one just mentioned. A woman, thirty-six years of age, was delivered on the 26th of Feb. 1806, at the Hospital of Humanity at Rouen, of two male children, the one white, the other a mulatto. She was in the eighth month of her pregnancy. The two placentæ, which were expelled a few minutes after delivery, were joined together, in the manner observed in twins. This woman ordinarily cohabited with a white man; but upon being questioned closely by M. *Delmas* and M. *Laumonier*, surgeons in chief to the hospital, she confessed that she had twice yielded to the solicitations of a negro, and that at that time she supposed herself to have been four or five months gone with child. The two children lived only about three hours.

The same surgeon relates a curious instance of an aneurism of the coronary artery of the stomach. A man was brought into the hospital at Rouen, whose skin universally was of a blue tinge, and his lips livid; there were convulsive movements, especially of the muscles of the face; the jaw was locked, the breathing laborious, and the expectoration bloody. These symptoms recurred at intervals, till the death of the patient, which took place April 9th, 1806. Upon opening the body, an aneurismal tumour was found in the coronary artery of the stomach, and which had burst into the cavity of this organ, filling it with blood.

Extraordinary Phenomenon.

THERE has lately been exhibited before the Medical School of Paris, an extraordinary child. His age is only three years and eight months, yet in appearance he has reached the period of puberty. His voice is strong and masculine; his chin is beginning to be covered with a beard; and he lifts with ease a weight of thirty pounds. His appetite corresponds with this premature development: he eats a pound or two of animal food at a meal, and

drinks two or three bottles of wine; his consumption of bread is in an equal proportion. The name of this extraordinary phenomenon is *Michael Dufour*, and his parents are poor country people.

Esprit des Journaux, Oct. 1806.

DON *Hippolyto Ruiz* and Don *Joseph Pavon*, distinguished botanists of Peru, have received letters from their pupil, Don *Juan Trafalla*, dated from Cuenca in South America, the 14th of Nov. last, in which he gives an account of his having discovered, in the mountains of Loxa and Juen de Bracomoros, thirty-two species of cinchona, different from any hitherto known; making in the whole, with those we are already acquainted with, no less than fifty different species of this bark.

Destruction of Contagion.

THE oxy-muriatic acid gas is now generally employed in the French hospitals for the destruction of contagion, and the purification of close unventilated apartments. M. *Desgenettes* put its efficacy to the most rigorous test in the Military Hospital of *Val-de-Grace*; and it appears, from his report on the subject, that the gas not only checks the propagation of contagious diseases, but contributes also to their cure. M. *Pinel* employed it with equal success in the most unhealthy wards of the *Hospital de la Salpetriere*. In Spain it has likewise been had recourse to with the most decided advantage, and the King has conferred rewards on those who employed it.

A Memoir has lately been published by order of the King of Spain, containing a detail of some successful experiments made with the machine for disinfecting air, contrived by M. *Morveau*. It appears from these experiments, that the mineral acid fumigations are an excellent preservative against the contagion of the yellow fever. M. *Cabanellas*, a celebrated physician, shut himself up, with his two sons and forty-eight other persons, in a hospital at Carthage, in which a great number of persons had perished by the yellow fever, and which still preserved traces of this horrible malady. After forty days residence, with merely the precaution of using the mineral

acid fumigation, they experienced not the slightest inconvenience.—To some this would seem to be a stronger proof of the non-contagiousness of the disease, than of the efficacy of the remedy.

Precipitation of Metals from Alkaline Solutions of them.

IT has long been known that certain metals precipitate others from acids in their metallic state. Thus iron throws down copper, and copper silver. M. Klaproth has lately shewn, that the same precipitations may be made when the metals are dissolved in alkalies. Lead is thus precipitated in the metallic state, by introducing a cylinder of zinc into a solution of oxide of lead in potash. The same result is obtained when zinc is put into solutions of the oxides of tin and tellurium in the same alkali, and into the solutions of oxides of copper and of tungsten in ammonia. An easy method is thus afforded of reducing the refractory metallic oxides to the metallic state.

MEDICAL AND PHILOSOPHICAL
INTELLIGENCE.

DR. Adams has ascertained, by repeated observations and experiments at the Small-pox Inoculation Hospital, what we have long suspected, that it is by no means indifferent what kind of matter is used for insertion. He has found more than one kind of pock which may be perpetuated by successive inoculations; and, what is still more remarkable, that it is possible to inoculate with a small-pox, which, though attended with the usual eruptive fever, will produce for the most part no secondary pustules.

These curious facts, which we shall shortly have occasion to revert to in our account of Dr. A.'s "Popular View, &c." just published, ought to teach us not hastily to despise or neglect popular opinions, since they are in general the result of extensive observation. It has always been a popular notion, that the character of the inoculated small-

pox depended very much upon the kind of matter employed; but practitioners in general have paid little attention to this, and have not hesitated to make use of matter from the most malignant sort, and have even sometimes taken it after the death of the subject. It appears now probable, that the fatality of the inoculated small-pox may have been much increased from this circumstance, and the reputation of the practice lessened in consequence. We trust a little more caution will be henceforward made use of.

THE chicken-pox have been lately prevalent in various parts of the metropolis, and many of the cases have been of so severe a character as to be mistaken for small-pox, even by medical practitioners. As some of these cases have occurred in subjects that had previously gone through the cow-pock, it will readily be supposed that they have contributed not a little to strengthen the prejudices (if they can be properly so termed) which still subsist very generally in the minds of the middling and lower classes of society against vaccination.

Some certain and easy criterion is still much wanted, to enable us to discriminate between small-pox and chicken-pox. It is not to be found in the appearance of the pustules; for though in general in chicken-pox they are smaller and more acuminate than in small-pox, it is not always so: many of the pustules, in a severe case of chicken-pox, being as large and as globular (and sometimes with indentations) as in the small-pox. In duration, also, they sometimes equal the small-pox; for we have seen, in repeated instances lately, the pustules full of matter, semi-purulent or opaque, as late as the tenth day of the eruption. The constitutional disorder is likewise often very severe, both before the eruption and during its progress to maturation.

Dr. Adams asserts, that the slough found at the bottom of the variolous pustule is a never-failing criterion; and we have no reason to doubt the fact: but this slough is not always very easily found, at least by those not previously well acquainted with it; while it exists only in certain stages of the pustule. Add to this, that in very slight cases of small-pox there is not always to be found a single pock that matures regularly; and in such cases we should scarcely expect a slough at the bottom, or at least to be able to detect it. We know very well that those supposed to be most conversant with skin-diseases have been deceived.

M. LA GRANGE observes that tannin has an affinity for alkalies, earths, and metallic oxides; and that it is converted into gallic acid by absorbing oxygen. These two substances, therefore (tannin and gallic acid), can no longer be considered as specifically different.

DR. Halliday, of Halesworth, in Suffolk, has a work in the press entitled, *Observations on the Causes and Consequences of Emphysema*.

DR. Young, late Professor of Natural Philosophy at the Royal Institution, is preparing a work relating to every department of medical science, upon the plan of his *Principles of Natural Philosophy* lately published.

M. PROST is about to publish *Physiological Essays on Insanity*, with Reflections and Analytical Researches relative to the circumstances,—1st, which predispose the mind to that affection—2d, which cause it—and, 3d, which continue it. A variety of hints are added towards establishing a rational mode of treatment.

AMONG the propagators of the vaccine inoculation in the Danish dominions, there are two females who have greatly distinguished themselves. The name of the one is Madame *Leganger*, at Elfwood, in Norway, who has herself vaccinated four hundred and ninety-two persons, and a Madame *Schyt*, a doctress in the Isle of Falster, who has conferred the same benefit on a great number of persons.

THE vaccine fluid of the 8th day, taken cautiously, so as to avoid any admixture of blood, has been lately examined at the Vaccine Institution by a powerful compound microscope. It appeared to be distinctly globular, in the manner that has been described with regard to the blood, though the particles appeared larger than those of the blood. On diluting the fluid with water, the globular appearance was no longer perceptible.

Transparent mucus, from the nostrils of a person ill of a catarrh, was also observed to be distinctly globular, and the globules equally disappeared on dilution.

Fluid gonorrhœal matter, immediately after its being taken from the patient, was observed to be globular, like common purulent matter; and even after being dried, and again moistened with water so as to be thick and turbid, it still retained its globular character.

As far as these experiments go, it would seem that not only the pus of abscesses and sores is globular, as discovered by Mr. Home, but that fluids discharged by other inflamed surfaces, both transparent and opaque, have that property, as well as the transparent matter of the vaccine vesicle.

In the second Number of the Medical Observer (which will assuredly be published on the first of October) the Editors have given the composition of the nostrums they take notice of, from an accurate analysis and from the specifications made at the Patent Office. They have also brought to the test of examination the testimonies on which they are supported, by the evidence of the respectable characters whose names are introduced to the public as giving quackery their sanction. In this second number will appear, Letters from the Lord Bishop of Carlisle, Sir Joseph Banks, Bart. and other highly respectable personages. In their observations on the present state of the medical profession, they have entered into a candid inquiry into the powers of the College of Physicians, and the duties their Charter imposes on that body. On this subject a Letter addressed to Sir Lucas Pepys, Bart. as president of the College, also appears from an eminent Physician in London.

LECTURES.

ST. GEORGE'S HOSPITAL.

Mr. Home's Lectures on the principal Operations in Surgery, given gratuitously to the Pupils of this Hospital, will commence in October next, as usual.

Mr. Gunning, Surgeon to St. George's Hospital, will commence his Lectures on the Principles and Operations of Surgery on Monday the 5th of October next, at eight o'clock in the evening. Particulars may be known at Mr. Gunning's house, 45, Conduit Street, or at St. George's Hospital.

Miscellaneous.

NOVEMBER 1807.

On the State of Medical Practice in Germany.

[Continued from page lxiv.]

Hospital of the Brothers of Mercy (Barmherzigen Bruder-Spital).

THIS hospital, like all the others of this order, was founded by St. Jean-de-Dieu. It has an established relation with many others that exist in Hungary, Bohemia, Moravia, &c.; and at the end of every year, a list is printed of the patients admitted, cured, and dead. This hospital, which admits annually from seven to eight hundred patients, has 140 beds, some of which are provided by the different corporations, for the use of their members. Excepting this, the hospital receives every patient that offers, of whatever nation, religion, or condition he may be. The great hall on the ground floor is paved, and too low; and has also the fault of having light admitted on one side only. As it receives the overcharge of all the hospitals, and fevers of the low and putrid kind were then the predominant diseases, the air of it appeared to me to be loaded with animal miasmata. I made the remark to Dr. de Ferro, who repeated, in my presence, to the apothecary, the order to employ regularly the nitric acid fumigations. He prefers the method of Dr. Carmichael Smyth to that of Guyton, because the former is not injurious to patients ill of pulmonary complaints.

The number of brothers of the order is about fifty: some of them are priests, and perform the religious services of the house; the rest are physicians, surgeons, apothecaries, and herbarists. When the hospital is full, the brothers give their advice and medicines to the poor gratis, especially those of their own quarter.

‘ *Hospital of St. Elizabeth (Elizabetterinnen Spital).*

‘ This hospital, founded by *Joseph the First*, has fifty beds for women only. The sisters of the order perform the offices of the hospital. The wards are too low, the beds crowded and shut up with curtains, and the windows too low.

‘ *St. Mark’s Hospital (Heiligen Marcus-Spital).*

‘ This is destined to the poor of both sexes, who are lame, or whose diseases have not been cured at the General Hospital. The rooms here are well lighted and airy, and the beds spacious, and at sufficient distances. Every thing, in short, is kept neat and in great order. The apothecary’s room is well disposed, but on too large a scale for a house of incurables.

‘ Doctor *Ferro* proposed to me, after having gone through the different apartments, to visit the dead room. I accepted the invitation, without imagining that such a place could have any thing deserving of curiosity: but I found it well worthy of being seen. It is a large room kept exceedingly clean and neat, and fitted up like a chapel, having two altars covered with cloth. Upon these are placed the bodies of the dead, where they remain for eight and forty hours. Over the altar hangs a cord that rings a bell upon the slightest touch; and it is fastened, by a loop, in the hand of the corpse, that, in case of a return to life, he may be able to obtain assistance. There is also a fire-place, in which a fire is constantly kept lighted during the winter; and the lock of the room is so constructed, as to open from within with the greatest facility.

‘ This precaution, though rarely necessary, is not altogether undeserving of imitation. Dr. *Ferro* informed me, that a case of resuscitation once occurred in the dead room of the General Hospital.

‘ *Hospital for Convalescents (Reconvalescenten-Spital).*

‘ This Establishment was founded in 1759, through the munificence of the Empress Maria Theresa. It is situated by itself in the *Landstrasse* suburb, on an elevated and healthy spot. The building is surrounded by a large and

pleasant garden, which serves as a promenade for the convalescent patients. This hospital, being a branch of the *Brothers of Mercy*, all the sick of which it receives, is attended by the order.

‘ It is in this hospital that Dr. *Ferro* shewed me the box containing the apparatus for drowned persons. Besides instruments and excitants similar to those used in France, it contains printed instructions, regarding the time and manner of using the different parts of the apparatus in the various kinds of sudden death. These instructions, which are more particularly applicable to drowned persons, and were drawn up by Dr. *Ferro*, are distributed by the order of government to all the surgeons in the quarters of the city where the box is deposited, who are required to give a public lecture annually on the subject. No one is admitted a master-fisherman at Vienna, without first proving that he has attended these lectures, and profited by them.

‘ *Hospital for Lunatics* (*Narren Thurm*).

‘ This is a round tower, situated between the General and Military Hospitals. It presents a great number of small grated windows, and would sooner be taken for a jail for felons, than an asylum for wretchedness and misfortune. It is five stories high, has a court in the centre, and has twenty-eight wards, which are heated in winter by fixed tubes. I went in the morning, in the hope of meeting Dr. *Gesing*, who succeeded M. *Nord*; but as he was not there, I could not get a sight of the hospital.

‘ *University of Vienna*.

‘ This University was founded by *Frederic II*, in 1237. The buildings which it occupies at present were constructed in the reign of Maria Theresa, in 1753; and it was in 1754 that the existing plan of studies, and the number of professorships, were regulated by the illustrious Baron *Van Swieten* and M. *de Rieger*. There is placed in the medical hall, a bust in bronze of the celebrated commentator of Boerhaave, by the orders of the Empress Maria Theresa.

‘ The rector of the University is M. *de Stifft*, Aulic

Counsellor, First Physician to the Emperor and Empire, Director of Medical Studies, and President of the Faculty.

‘The rector of the Faculty of Medicine is the illustrious Baron *de Quarin*, Counsellor and Physician to his Majesty, Member of the Medical Societies of Paris, London, Copenhagen, Madrid, &c. The following is a list of the professors.

‘*Professors of the Faculty of Physic.*

‘*M. Leber*, D.S., Surgeon to the Emperor and Professor of Surgery. After an entertainment given by the University, the Emperor sent *M. Leber* the medal of merit, with a gold chain, as a reward for the services rendered by him to the State, during a period of fifty years.

‘*Collin*, M.D., Professor of Pathology and Materia Medica.

‘*Rienlen*, M.D., Professor of Practical Surgery.

‘*Prochaska*, M.D., Professor of Anatomy, Physiology, and the Diseases of the Eyes.

‘*Jordan*, M.D., Professor of Natural History.

‘*Peutl*, M.D., Professor of Clinical Medicine.

‘*Langmayer*, Professor of the Theory of Surgery.

‘*J. F. de Jacquin*, Professor of Chemistry and Botany.

‘*Steidele*, Professor of Midwifery.

‘*Boër*, Professor of the Practice of Midwifery.

‘*Bietz*, Professor of Medical Police.

‘*Castellitz*, Professor of the Art of Prescribing, of Therapeutics, and of Materia Medica.

‘According to the last regulations respecting the teaching and practice of medicine, promulgated by the rector *M. Stiff*, no one can be created a doctor of physic without having attended the *Humanity* class for three years, philosophy for two years, and materia medica for five years. Most of the lectures are delivered in Latin.

‘For those surgeons who have served an apprenticeship in the country, the duration of the course of study is reduced to two years. Midwives are not permitted to practise till they have attended an entire course of lectures in midwifery, and also have attended for at least two

months to the practice of midwifery in the General Hospital.

‘ The candidate for a Doctor’s degree in physic must submit to three examinations; the first, in anatomy, physiology, surgery, medical jurisprudence, natural history, botany, and internal pathology.—The second examination relates to diseases of the eyes, chemistry, and the practice of physic.—In the third, the candidate must undertake the treatment of three patients in the clinical ward; and when the disease has terminated, he must draw up the history of it, and submit it to the censure of the Faculty. This serves instead of a Thesis.

‘ The examinations in surgery are two: the first relates to external pathology, general and special; medical and surgical instruction; and the application of instruments and bandages. The second examination is on diseases of the eyes. After this, the candidate must prove his dexterity in anatomy, and in the practice of the most important operations.

‘ As my stay in Vienna was very short, I had an opportunity of becoming acquainted with but very few of the most eminent practitioners of the place. I shall speak first of those belonging to the University.

‘ *M. de Stiff.* I asked this gentleman if he had an intention of soon completing the *Materia Medica*, the first volume of which he published a good while ago. “There reigns,” says he, “at present, a heap of medical systems, which trouble all the heads in Germany: so that, in my own opinion, it is wisest to wait till the medical horizon is again clear from the clouds which at present obscure it.”

‘ I asked him who, in his opinion, was the best writer on medical jurisprudence and medical police? He answered, “*Peter Frank.*”

‘ On the 23d March, 1805, the picture of Dr. *Stiff*, magnificently habited as Rector of the University, was placed, with great pomp and ceremony, in the Hall of Audience of the Faculty, in the honourable rank of those who have merited most from the profession.

‘ Baron Quarin is still one of the first physicians of Germany, and the most justly and generally esteemed. He is a venerable old man, seventy-two years of age. His figure is noble and majestic, and, in spite of years, betrays great constitutional vigour, sound health, and energy of mind. He has followed closely in his works the steps of Hippocrates, and is at once an excellent practitioner and a judicious author.

‘ The last work of M. Quarin, *Animadversiones in diversos Morbos Chronicos*, is, in his own opinion, more valuable and better written than the *Treatise on Acute Diseases*; and of all his works, he gives it the preference. He informed me, that the first edition being exhausted, the bookseller published a second without his participation, which is full of faults: for this reason, he is about to publish another himself.

‘ I had not the pleasure of seeing M. Leber, who is the oldest and one of the best surgeons in Vienna. As he is said to be not every easy of access, especially to those belonging to the military, I procured from Dr. Kaderbauer, of Lintz, a letter of recommendation to M. Zimmermann, a distinguished surgeon, son-in-law of the worthy professor of that name, who could present me; but not finding him at home, I contented myself with putting my letter in the post office.

‘ M. Prochaska, one of the best physiologists in Germany, has scarcely yet reached his forty-fifth year. Although he has the air of a profound thinker, and has rather a forbidding address, I met with a most favourable reception. I heard him lecture in Latin on the circulation; he had his work before him, and read the passages in succession, commenting on them, as he proceeded, in a tone somewhat monotonous perhaps, but always with great judgment. I was surprised to observe but fifteen pupils at so good a lecture.

‘ M. Prochaska had afterwards the complaisance to shew me the anatomical cabinet of the University. The collection of all the parts of the eye, which are prepared with great care, is exceedingly curious; as is also that of monsters. There are several pieces of morbid anatomy modelled in plaster.

‘ I observed with much satisfaction some beautiful injections recently done; as, 1. that of a stomach, the internal membrane of which is perfectly injected, whilst a considerable schirrus formed in its substance shews not the least vestige of a vessel: 2. the intestines, both great and small, the mucous membrane of which is entirely red, whilst the external remains white: 3. hands and feet, the cellular tissue and muscles of which are filled with injection, as well as the capsular ligaments, but the tendons and cartilages appear absolutely without colour.

‘ In the collection of morbid anatomy, I remarked a kidney of an enormous size filled with calculi: another with an abscess in its interior, the circumference of which is covered throughout its whole extent by a preternatural membrane of great thickness, perfectly similar to that which I observed at Metz, surrounding the entry of the trunks of the pulmonary vessels of the left lung, which was entirely destroyed by suppuration. The most important work of M. *Prochaska* is his *Physiology*, in 2 vols. 8vo, published originally in German (because in the time of *Joseph II* all medical instruction at Vienna was conveyed in that language), and which he has just brought out in Latin.

‘ M. *Jacquin* is the worthy son of the illustrious physician of that name who taught botany here a short time ago with so much distinction, and whom he has succeeded. M. *Jacquin* the elder is the author of the *Flora Austriaca*, and of the description of the garden of Maria Theresa; two magnificent monuments, which will immortalize his name, and which M. *Ventenat* has lately attempted to imitate in his Garden of *Malmaison*. M. *Jacquin* senior, who is also Counsellor of Mines, has just been decorated, by the Emperor Francis II, with the order of *St. Stephen*, an honour that has been hitherto exclusively reserved for the higher class of nobles. It was accompanied with a flattering letter from the Emperor, which states it to be as “ a recompence for important services rendered to Germany, during fifty years, in the capacity of professor at the University of *Schaunitz*, and at that of Vienna; as superintendant of the Garden of Maria Theresa; and for his valuable writings, &c.”

‘ *M. Jacquin* is a fine old man, who has preserved, at an advanced age, his gaiety and taste for study. He is at present occupied with a great work on botany, which will prove his literary testament.

‘ *M. Jacquin* the son, resided a long time both at Paris and at London, and formed an intimacy with the most celebrated chemists of those places. I had the advantage of being present at one of his lectures. He speaks German, without notes, with facility and elegance.

‘ The amphitheatre and the laboratory are united in the same hall, so that the pupil has every operation immediately under his eye; an arrangement of great utility in the study of chemistry. After the lecture, he shewed me the chemical cabinet of the University, to the value of which he has himself greatly contributed. The objects which especially engaged my attention were, 1. a beautiful tinkal, a regular crystal that weighs three pounds: 2. the balloon which *Lavoisier* employed in his grand experiment on the recomposition of water, and which he gave to *M. Jacquin*: 3. a hydrostatic lamp of *Humboldt*: 4. a rare collection of essential oils: 5. manna in tears, from Hungary, not at all different from the Calabrian: 6. sugar made from carrots and beet-roots, crystallized and extremely white. *M. Jacquin* is convinced, as well as *Achard* of Berlin, that sugar can not be profitably extracted from these roots in the large way. 7. an ingot of copper from Japan: 8. camphor extracted from the flowers of indigenous aromatic plants: 9. camphor produced by the distillation of the volatile oil of turpentine and muriatic acid gas: 10. a specimen of adulterated tutty, confiscated in the shop of a druggist; it consists of argillaceous earth, mixed, in a certain quantity, with sand, and coloured with an oxide of iron: lastly, two ounces of white sugar, extracted from the urine of a diabetic patient.

‘ *M. Steideler* is the author of various works in German on midwifery. He frequently, in his practice, has recourse to artificial turning, as well as *M. Teller*, who, they say, has the most extensive practice in Vienna. I had not an opportunity of seeing either of them.’

[To be continued.]

*Of the State in which Mercury exists, when combined with
Unctuous Matters: by M. Vogel.*

IT is known that animal fat acts more or less on several metals. Copper, for instance, gives it a green colour, when air can act jointly with it. The most important combination of this kind, however, is that of mercury with lard, in the common blue ointment of the shops. Many apothecaries have endeavoured to improve the processes for medicines of this kind, by using certain intermedia; as honey, turpentine, or rancid oil. And Fourcroy has shewn that fat, when oxygenized, is better adapted for the extinction of mercury, than in the simple and recent state. But it ought to be ascertained whether any and what change in the quality of the medicine takes place in the different processes; and especially what state the mercury is in, in these combinations; some supposing it to be oxidized by the friction employed in the process, while others imagine it to remain in the metallic state, and only in a state of extreme division. In order to discover which of these opinions was the true one, M. Vogel made the following experiments.

He triturated equal parts of lard and mercury in a mortar, which he had accurately weighed. When the mercury was completely extinguished, he weighed the mortar with the ointment in it, and found it had gained nothing. Hence he inferred, that the mercury, if oxidized, must have been so at the expense of the lard, and not by the oxygen of the air.

To discover the state of the mercury, he introduced this ointment recently prepared into a cylinder of glass hermetically sealed at one end; and kept it three hours in boiling water. After it was cold, two very distinct strata appeared, the uppermost of which was white, like lard. From this he separated the lower by cutting the cylinder with a file. On braying this gently with hot water, three drachms three grains of running mercury were collected. The remainder, which obstinately retained a little lard, was treated with a lie of caustic potash. The soap formed was dissolved in alcohol, and thus the whole of the mercury was recovered.

He likewise separated the lard from the mercury by

boiling the ointment in water. The lard swam on the top, slightly coloured by a little mercury, that adhered strongly to it; and the mercury remained at the bottom of the vessel, mixed with a little lard, but the slightest agitation united its globules.

The ointment being treated with muriatic acid in close vessels, no oxygenized muriatic gas was evolved.

Ointments that had been prepared three months, eight months, and several years, being examined, a little oxidized mercury was found, but the greater part was still in the metallic state.

M. Vogel likewise triturated mercury with Venice turpentine, which extinguished it with facility. The turpentine being then dissolved in alcohol, the mercury was left behind in little globules; and the alcohol being evaporated, the turpentine was recovered without any alteration in its properties.

In these ointments, therefore, the mercury is not in the state of oxide, as has generally been supposed, but merely divided very minutely. M. Vogel is likewise inclined to think, that it is in a similar state in many mercurial compounds more or less in use, as the mercurial plaster of Vigo, ethiops saccharatus, ethiops alkalifatus, Plenck's gummy mercurial, and a number of similar mixtures. If the colour be objected, it may be observed, that antimony, however brilliant, bismuth, or any other metal capable of being powdered, becomes of a blackish grey when minutely divided.

Memoir on the Analysis of Sweat, on the Acid which it contains, and on the Acids of Urine and of Milk: by M. Thenard. Read at the French National Institute.

‘ WHEN we examine the principal fluids of the animal œconomy, we find that some are alkaline, others acid. To the first class belong the blood and the bile; to the second, the urine, milk, and sweat. Two questions here naturally present themselves; namely, with respect to the nature of the alkaline matter, and of the acid. The first has been already resolved; the researches of M. Cadet and Deyeux having demonstrated, that no alkali but soda is contained in animal substances. The solution of the second question

has not yet been satisfactorily given: our knowledge of the subject is still inexact, and many of the results that have been offered are far from demonstrable truths. For this reason, I shall proceed first to a detailed and cautious analysis of the matter of *sweat*.

‘PART I. The *sweat* is a fluid separated from the blood by the exhalant vessels that are distributed universally over the surface of the body. It is more or less abundant in different individuals; and the quantity of it is visibly in an inverse ratio to that of the urine. *Cæteris paribus*, it is more copious during digestion, than at other times: the maximum of its production appears to be thirty-two grains per minute, while the minimum is about eleven grains in the same space of time: yet it is in much less quantity than the exhalation from the lungs; whence it may be inferred, that there is a wide difference between the nature and the mode of formation of the one and of the other. The one is the product of a particular secretion, similar, in some measure, to that of the urine; the other is composed of much water and carbonic acid, and is the product of a sort of combustion slowly effected by the atmospheric air.

‘The sweat, in the state of health, sensibly reddens blue paper and the tincture of turnsol. Some diseases, and especially putrid fevers, render it sometimes alkaline; however, to the taste it is always rather saltish, like culinary salt, than acid. Although colourless in itself, it stains the linen with which it comes in contact. Its odour is very peculiar, and becomes insupportable when highly concentrated, which is especially the case when distilled. But before I speak of the other trials I made with it, it will be proper to describe the means I employed to procure the necessary quantity.

‘I applied to persons who are constantly in the habit of wearing flannel next the skin. In order to avoid all source of error, the waistcoats, before being put on, were thoroughly washed in a solution of soap, then rinsed in water, and afterwards several times in weak muriatic acid, and again washed in repeated waters. The persons who were to assist in the experiment, before beginning it, were bathed in warm water, and had the trunk of the body well rubbed. The sweat being then collected without any interruption for ten days in the substance of the flannel,

I separated it from this by means of warm distilled water; and then concentrated it by boiling to the consistence of a syrup, in a retort, to the neck of which was adapted a recipient.

‘ The product of this distillation exhaled a highly nauseous odour, which diminished on cooling the liquor: it produced no change on the syrup of violets, but sensibly reddened the tincture of turnsol. Left to itself, and exposed to the contact of air, it preserved the transparency which it had at first, and underwent no remarkable change, except in regard to its odour, which disappeared entirely. Probably, in close vessels it would have putrefied, like the product by distillation of all the other animal fluids.

‘ The residue was in small quantity, and free from smell; although decidedly acid, it was the taste of sea salt that predominated; however, in the midst of this, something acrid and pungent might be discovered: it was slightly deliquescent, resolving into a fluid in the space of a few days: it dissolved perfectly in water. Neither lime, barytes, ammoniac, the acidulated oxalate of potash, the carbonates of potash and of soda, most of the acids, nor the acetite of lead, precipitated it, nor disengaged any substance from the solution: gall-nuts themselves occasioned only a slight precipitate; but the nitrate of silver rendered it very turbid.

‘ Calcined by itself, it was decomposed, vapours being disengaged which had nothing of the fetid smell of animal matter; it became converted into a black matter, composed entirely of sea salt, carbon, and scarcely perceptible quantities of phosphate of lime and oxide of iron.

‘ Lastly, when submitted to calcination, after the acid had been saturated with potash, there was obtained, in the black matter which resulted from it, this base in the state of carbonate, besides the matters already mentioned.

‘ These trials proved, that the *sweat* contained sea salt, slight traces of phosphate of lime and oxide of iron, a very small quantity of animal matter, but neither sulphate nor soluble phosphats; and, besides these, an acid, the nature of which might be already suspected.

‘ In fact, from this acid when combined with a base giving birth by calcination to a carbonate, it is plain that it must have belonged either to the vegetable or animal kingdom; and as, besides, it was volatile, and formed

soluble salts with the different salifiable bases, it became exceedingly probable that it was the acetous acid.

‘Led by this reasoning to believe in the existence of the acetous acid in sweat, it was still necessary to have recourse to positive experiments, in order to demonstrate fully the fact; for, although the properties mentioned belong to the acetous only among all the known acids, they might likewise belong to an acid of a new kind. Thus azote is far from being sufficiently characterized by the properties commonly assigned to it; such as its being free from odour and colour, and without any action on blue colours and the solution of lime; properties which are all in some measure negative, and far from being so characteristic as those which may be termed *positive*, as being founded on its combinations.

‘By distilling, therefore, with another acid, the residue by evaporation of a certain quantity of sweat, collected in a flannel waistcoat slightly alkalized, I could easily obtain the acid in question in an insulated state, and combine it with different bodies. In this distillation, I preferred employing the phosphoric acid; in the first place, because it is fixed, and in the next, because it is difficultly decomposed, and consequently reacts less on organic matters, than many others. I took, besides, every necessary precaution to condense the product of distillation in the recipient. This product reddened strongly the tincture of turnsol; its taste was that of a weak acid, and its odour that of vinegar. Combined with potash, it formed a salt, which, by evaporation, was reduced into small brilliant micaceous spangles, that were acrid to the taste, and deliquescent: upon the addition of the sulphuric or phosphoric acid, a strong odour of the acetic acid was exhaled; and, poured into a solution of nitrate of quicksilver, it threw down a precipitate of crystalline scales, similar to the acetite of quicksilver.

‘It was decidedly, therefore, the acetous acid: consequently, the sweat in the human subject consists, 1st. of a large proportion of water; 2. of disengaged acetous acid; 3. of muriate of soda; 4. of very minute quantities of phosphate of lime and oxide of iron; and, 5. of an inappreciable quantity of animal matter, which more nearly resembles gelatine than any other substance.’

[To be continued.]

Of the Nature of the Air in crowded Assemblies.

IT has been commonly supposed that the impurity and noxious effects of air in which a number of persons have been crowded together, is owing to a defect of the oxygenous portion of the atmosphere. Different experiments, however, concur in shewing that it is not to this source, but to the influence of particular effluvia that the ill effects are to be ascribed.

The purity of the atmospheric air (chemically speaking) varies very little in different situations. In the Theatre Francois at Paris, when there was a crowded audience, the air of the pit and of the upper part of the theatre were submitted to chemical examination, for the purpose of ascertaining their purity.

They were found scarcely to render lime water turbid: and,

While the atmospheric air without doors gave,

of oxygen	- - - - -	0,210 parts
The air of the upper part of the house gave	-	0,202
And that of the pit	- - - - -	0,204

Seguin has also analyzed the air of the wards of hospitals, which had been kept closely shut up for twelve hours. This air had an infected smell, so as to be almost insupportable; yet notwithstanding this, he found it to be almost as pure, in respect of the oxygen it contained, as atmospheric air.

Method of whitening Sponges.

SUSPEND under a bell glass any quantity of supple, well-washed, lightly moistened sponge. Then put into a glass or china saucer two or three drachms of the oxy-muriate of potash, and pour on it about an ounce of muriatic acid: place this immediately under the glass vessel along with the sponge. There is disengaged a great quantity of oxy-muriatic acid gas, which penetrates the sponge and deprives it of colour. The sponge after a time is to be withdrawn, and washed repeatedly in pure water, till deprived of the odour of the muriatic acid. Sponge thus prepared is of a beautiful light straw colour.

TO THE EDITORS OF THE MED. AND CHIR. REV.

Gentlemen,

I HAVE carefully perused the various essays on medical abuses, and the best mode of correcting them, which have appeared in your valuable and widely circulated Review, during the last two years. As the inquiry vitally concerns the interests both of the faculty and the community at large, you will, I trust, indulge me with a few observations. And, first, suffer me to return you my most unfeigned thanks for your candid and decorous manner of conducting the investigation. In this respect your Review exhibits a striking contrast to some others, which gives it a decided preference with every liberal and enlightened mind. Much has been written on *medical interference* and *incorrect practice*, with a design to shew that the physician is precluded by his diploma from meddling with surgery, midwifery, and pharmacy, while the surgeon and the apothecary are each of them at liberty, not only to monopolize these several callings, but to grapple with the physician in what is strictly denominated physic. The position seemed to me so extraordinary, and improbable, that I was led some time since to examine authorities, and found, to my great surprise, that the legal rights of medical practitioners had been either totally misconceived, or grossly misstated. It turns out upon inquiry, that the physician is the only person who is entitled to embrace the whole circle of human sufferings, and undertake the cure of all distempers which mortality is heir to. The surgeon is permitted to act in surgical complaints, but not to interfere in the practice of physic. As for the apothecary, he is merely a pharmacopolist, or vender of drugs, and has no *legal* title to attend upon the sick, or to prescribe medicine in any case. Such being the true situation of medical practice, it behoves every disciple of Esculapius to consider well the duties of his station, and to conform himself to that line of conduct which is best calculated to make him an useful member of the community.

Before I proceed to deliver my own ideas, it will be proper to transcribe the copy of a physician's and surgeon's diploma, that the reader may be better able to judge of the truth of my statement.

The Physician's Diploma.

“ Nos Academiæ Jacobi Regis Edinburgenæ Primarius cæterique Professores, hoc scripto testatum volumus A. B. postquam se suosque in re medica progressus facultati medicæ probasset luculento testimoniis ab ea nobis commendatum, summos in medicina honores gradum nempe doctoralem (subjecta prius publicæ professorum censuræ dissertatione sua inaugurali de delat. jurejurando solennibusq. rite peractis) consecutum esse, eique amplissimam potestatem medicinam ubique gentium, legendi, docendi, faciendi concessam, aliaque omnia privilegia, immunitates, et jura quæ hic aut usquam alibi ad doctoratus apicem evectis concedi solent : cujus rei quo major esset fides, nos sigillo publico appenso chirographa apposuimus. Edinburgi anno salutis humanæ millesimo, &c. &c. &c.”

The Surgeon's Diploma.

“ Know all men by these presents, that we, the Court of Examiners of the Royal College of Surgeons in London, have deliberately examined Mr. —, and find him *fit and capable to exercise the art and science of surgery*. We therefore admit him a Member of the Collège, and authorize him to practise the said *art and science accordingly*.

“ In witness whereof we have subscribed our names, and have caused our common seal to be set hereunto. Dated, &c. &c.”

It appears from these documents that physicians and surgeons are the only classes of admitted practitioners; and, what is still more important, no others are acknowledged in courts of law. But notwithstanding the unprotected state of apothecaries, I do not hesitate to allow that they are often usefully employed in administering to the sick, and it appears to me that their powers want only to be regulated and defined, in order to do away the disagreeable bickerings in private practice, which have been for many years a reproach to the faculty. While things remain on their present footing, the prescribing apothecary is not merely unlicensed; he is actually an intruder upon the rights of others. Such being the true situation of apothecaries in the Imperial Kingdom, I trust they will unite their endeavours to procure a legal claim to be

acknowledged as practitioners, a title which is now, I believe, withheld from them by all the Colleges of Physicians and of Surgeons in the British dominions. The writer of this article feels no desire to prejudice the country against apothecaries, whom he esteems to be necessary members of the community. The fact is known, and the question upon it has long been decided in our courts of law, where apothecaries can obtain no recompence for advice, for attendance, nor for loss of time, not even with respect to midwifery; their whole reward being limited to the number of draughts, mixtures, &c. had by the sick. A cause was tried not long ago before Lord Chief Justice Ellenborough, in which the anxiety of the court to reward an apothecary for visits into the country, both by night and day, was abundantly shewn; but after a patient hearing, the jury were obliged to find only for medicines, and to reject the other parts of his bill.

Having thus briefly noticed the legal powers of the physician, the surgeon, and the apothecary, I shall proceed to discuss the question of medical interference in a future number.

PRACTICUS.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

A GREAT number of observations and experiments have led M. *Wolfram*, a German physician, to suppose, that *syplica polonica* has its primitive source in the venereal disease. He has accordingly directed his treatment with this view, and has almost constantly, he says, succeeded.

The success of mercury, however, depends much upon the time of its administration: it is only in the latter stages of the disease that it appears to be useful.

Dr. *Keutsch*, a practitioner in the West Indies, has found frictions of the whole body with olive oil of great advantage in the yellow fever. They produced, he says, most copious perspiration, and checked the vomiting: the good effects of the frictions are enhanced, he observes, by adding camphor to the oil.

This practice was adopted probably from analogy with the plague in Syria, where we know oily frictions to have been of late years much employed. The suppression of the vomiting subsequent to the sweating, confirms the observation of Sydenham with regard to the pestilential fever, who found no means so effectual for the purpose, as throwing the patient into a profuse sweat.

Dr. Francis Balfour, of the Bengal Establishment, has published lately, in the eighth vol. of the *Asiatic Researches*, printed at Calcutta in 1805, some interesting remarks on sol-lunar influence in regard to the human body. He several years ago introduced the subject to the notice of the public, and his subsequent inquiries since that time have, it seems, confirmed the justness of his observations. He has subjoined to his remarks a scheme of an *Astronomical Ephemeris*, for the purposes of medicine and meteorology.

It is under fever chiefly that the effects of planetary attraction on the human body are perceptible, the paroxysms having a tendency to take place at those periods when the sol-lunar influence is at the height. Dr. B. lays down the following propositions on the subject.

1. The paroxysms of fever are produced by the action of sol-lunar influence.

2. The concurrence, however, of a certain state of the constitution is necessary, which he denominates the *paroxysmal disposition*, in order to excite and reiterate the paroxysms in such a manner as to form fever.

3. That in the course of the disease there takes place in the constitution a certain state, denominated the *critical disposition*, which tending gradually to *maturity*, at length concurs with certain remissions of sol-lunar power in producing a crisis; by which salutary change the tendency to paroxysm is diminished or removed, so as to bring fevers to an end after certain intervals of time.

The result of the whole is, ' that the fluctuating force of sol-lunar influence coinciding and co-operating, in all its various stages and degrees, with the various modifications of the paroxysmal disposition, excites febrile paroxysms to

attack on all the days of the neaps and springs, and supports and reiterates them, according to various types, until the commencement of different neaps; at which junctures, the maturity of the critical disposition happening to concur with the periodical decline of sol-lunar influence, these paroxysms then subside, and come to a termination or crisis; and thus form different successions of paroxysms constituting fevers of various length or duration.'

Dr. B. alleges, that not only the general character of the disease is thus affected by sol-lunar influence, but even its particular symptoms. The state of the urine, the appearance of eruptions, sores, and ulcers, according to him, undergo alterations corresponding to the position of the sun and moon.

Fevers, it is said, are most frequent about the time of the equinoxes, when the sol-lunar influence is greatest. Something similar to this, we believe, was observed by the late Dr. Currie at Liverpool.

Dr. Shaw, of Philadelphia, has lately experienced good effects in two cases of stricture in the urethra, from what he calls the Tobacco Bougie. A thin smooth leaf of strong tobacco, previously moistened with water, was wrapped around a small-sized bougie, and carried down to the stricture, where it was kept for the space of fifteen minutes, when it passed the stricture and went into the bladder. At this time the patient complained of sickness at stomach, and a sweat appeared on the forehead. As soon as the bougie was withdrawn, he discharged half a pint of urine, which flowed in a natural stream. The application was repeated twice a-day for two or three days; and the patient has remained free from the disease ever since. The common bougie and elastic gum catheter had before been used without effect.

In another instance of a similar kind, the bougie was smeared over with an extract of tobacco. A similar sensation of sickness and debility took place in this as in the other case, while the bougie was in the penis. The operation was repeated two or three times afterwards, and produced such torpor and relaxation of the *sphincter vesicæ*,

as to render the patient incapable of retaining his urine. This inconvenience, however, was removed by taking a few drops of *tinct. cantharid.*

(Cox's Philadelphia Med. Museum.)

A most lamentable case has lately occurred in the practice of midwifery in this metropolis, which we should not have mentioned, had it not been already made the subject of allusion in the daily newspapers. Nothing, in fact, can justify the publication of facts of this description, but the motive of guarding others against similar errors. Medical men can never sufficiently reflect upon the importance it is of to their own comfort and reputation, as well as to the welfare of those for whom they are employed, to act in all cases with coolness and deliberation: to weigh well every step they are about to take, and its consequences; which otherwise, as in the case we are about to mention, may prove fatal to the object of their care, and to themselves a source of the most poignant regret for the remainder of their lives.

A female in the middle rank of life was delivered, without any unusual difficulty, of a healthy child, by a practitioner considerably advanced in life, whose name it would be cruelty to mention, since, however unhappy the event, there can be no doubt of his having acted with the best intentions. A small part only of the placenta was brought away, attached to the umbilical cord; the rest remaining behind in the uterus. This gave occasion to subsequent hæmorrhage, which continued to recur at times till the third day after delivery, when the practitioner being called, he judged it expedient to introduce the hand into the uterus, to unburthen it of its contents. In endeavouring to effect this, the hand, either from too much violence, or possibly from a morbid state of parts, passed into the cavity of the abdomen; the body of the uterus itself, with its appendages, was brought down, and a large portion of intestine immediately followed. By some infatuation, the consequence probably of alarm and trepidation, the practitioner seems not to have been aware of the injury that had been done: mistaking them, no doubt, for the placenta and membranes, he cut off with his scissars all that had passed the os externum, including the uterus and

its appendages, and several feet of intestine detached from its peritonæal coat, which was left behind.

The event was such as might have been expected: the patient died under the operator's hands. An inquiry took place by the coroner and his jury, who returned a verdict of homicide; and the matter will probably undergo investigation in a court of justice.

This terrible misfortune (for such only can it be deemed to all the parties) can not be accounted for but by supposing the practitioner to have been confused and alarmed to such a degree as to deprive him momentarily of his faculties and feeling; for he had been a great number of years in the extensive practice of midwifery, and was held in esteem by his employers for skill and humanity: he was likewise free from every propensity to indulge in the use of strong liquors. He does not seem even to have been conscious of the mischief he had done; for not the least attempt was made at concealment, but the parts were put aside without caution, in the usual manner.

About twenty years ago, a case in many respects similar occurred to a physician of considerable eminence in this branch of the profession: with this difference, however, that the injury appears to have been committed knowingly, and for the purpose of concealment. In an attempt to turn the child, in a case of wrong presentation, the uterus burst, and the intestines came down. Convinced that the accident must prove fatal, the practitioner cut off and put in his pocket the protruded bowels, for the purpose of concealing the nature of the accident. The prying eyes of the nurse, however, discovered what had taken place; and the doctor, in order to avoid a prosecution, was compelled to abandon at once the profession and the metropolis.

It is scarcely necessary to observe what an important lesson is suggested to the practitioner of midwifery by these and similar instances; not to lose his presence of mind under circumstances of difficulty and danger, whether he regards his own reputation, or the safety of his patient. In the exercise of this branch of the profession, men are often placed in situations of peculiar difficulty and embarrass-

ment, from which nothing can relieve them but the utmost prudence and caution. It is not, so much, ignorance that is to be dreaded in these cases, as rashness and precipitancy: the latter are, indeed, much less excusable than the former.

The event above described has excited no small sensation among the gentlemen-accoucheurs of the metropolis, who have held various consultations on the subject. It has been proposed, it is said, to take advantage of the circumstance, in order to endeavour to obtain a charter for establishing an obstetric college, for the regulation of this branch of the profession. The wisdom of such a measure, however, is very questionable. Many thinking men are of opinion, that the art of midwifery has already made too great strides among us, and got into too many male hands, for the honour or reputation of the female part of the community. Midwifery is unquestionably a part, and but a small part, of surgery; and ought not to be separated from it. The College of Physicians have determined wisely, in resolving to abolish, for the future, the class of licentiates in midwifery; and the College of Surgeons would, we think, do well in adopting it. It is certainly a crying sin that this branch of the art should be open to every pretender, who chuses to assume it as an introduction to ordinary practice, without giving any proofs of education or acquirements in it. Yet so it is: there is no where lodged authority to examine and license, nor a power to interdict. Let a professorship of midwifery be attached to the Court of Examiners of the College of Surgeons, whose province it should be to examine and certify with regard to the qualifications of candidates for this branch of practice, and without whose license none should be suffered to assume it. This would sufficiently meet the evil, and is perhaps all that ought to be attempted.

THE Court of Assistants of the Royal College of Surgeons, London, have determined that the prize subject for the year 1808, for a premium of ten pounds, given by a member of the college to the author of the best dissertation on a practical subject in surgery, shall be "Cancer."

Candidates must be members of the College, not of the

Court of Assistants. The dissertations are to be in English, and the name of the author given in a sealed letter, in the usual manner. They must be sent to the Secretary on or before Christmas day, 1808.

THE New Rupture Society, patronized by His Royal Highness the Duke of York, has lately received the liberal donation of one hundred guineas from His Grace the Duke of Bedford; also a munificent transfer of five hundred pounds three per cent consols, with ninety pounds dividends, from John Tyrwhitt, Esq. of Netherclay, in Somersetshire, through the medium of John Heavyside, Esq. for the purpose of promoting the objects of that Institution, and especially for relieving the poor afflicted with prolapses. The benefits of this very laudable charity are extended to all parts of the kingdom; and the patients in London are attended by W. Blair, Esq. No. 69, Great Russell Street, Bloomsbury Square. Subscriptions are received by Mr. Sawyer, the Collector, No. 20, Great James Street, Bedford Row; and by Messrs. Hoare, Bankers, in Fleet Street, the treasurers.

DR. James Sanders, President of the Royal Medical and Physical Societies of Edinburgh, has nearly ready for publication, a Treatise on Pulmonary Consumption, with an Inquiry on Fox Glove. The same gentleman is likewise preparing for the press an Inquiry concerning Hydrocephalus, in which he proposes to shew that it admits of prevention and cure equally with other of the more dangerous diseases.

Mr. James Wardrop, of the Royal College of Surgeons, Edinburgh, is preparing an Essay on the Pathology of the Human Eye; in which the various morbid appearances of that organ will be illustrated by coloured engravings.

A Translation, by Mr. Gregory, of the Abbé *Hauy's* Elementary Treatise of Natural Philosophy, will appear very soon.

Dr. Kinglake has just completed his 'Additional Cases of Gout, in farther Proof of the salutary Efficacy of the Cooling Treatment of that afflicting Disease, with illustra-

tive Annotations, written Authorities in its Support, controversial Discussions, and a View of the present State and future Prospects of the Practice.'

The design of this work is at once to communicate to the public, with fidelity and minuteness, a practical, theoretical, and controversial account of the cooling treatment of gout, from the late period of its introduction to the present time, in which, it is presumed, sufficient evidence is afforded of its beneficial effects, to warrant a confident prosecution of the practice.

In the press : A Course of Lectures addressed to the Students in Surgery ; comprising a Systematic Reform of the Modern Practice of Adhesion, particularly in relation to the Abuses of the Thread Suture in the Surgery of Wounds : by Samuel Young, of the London College of Surgeons, &c.

Mr. William Lawrence, Demonstrator of Anatomy at St. Bartholomew's Hospital, has in the press a Treatise on Hernia ; being the Essay which gained the prize offered by the Royal College of Surgeons in 1806.

A Second Edition will shortly appear of Mr. Bryan Crowther's ' Practical Observations on Diseases of the Joints, commonly called White Swellings ; with some Remarks on Caries, Necrosis, and Scrophulous Abscesses.'

THE following gentlemen have been just admitted members of the Royal College of Physicians of London :

Dr. Richard Faber, Richmond, Yorkshire ; Dr. Tristram Whitter, Worthing, Sussex ; Dr. Clement Hue, Cecil Street ; *Candidates for the Fellowship.*

Dr. John O'Ryan, Waterford ; Dr. Henry Reeve, Norwich ; Dr. John Robinson, Doncaster ; Dr James Clarke ; Dr. Patrick Miller, Exeter ; *Extra Licentiates.*

Dr. Yelloly has been lately elected one of the Physicians to the London Hospital, in the room of Dr. Cooke, resigned.

Miscellaneous.

DECEMBER 1807.

On the State of Medical Practice in Germany.

[Concluded from page lxxx.]

Imperial and Royal Josephine Academy of Surgery at Vienna.

‘ THIS is a handsome monument to the enlightened beneficence of *Joseph II.* The edifice has been constructed, and the establishment organized, upon the plan and under the direction of *Brambilla*, surgeon in ordinary to this prince, and first surgeon to the army. This is a school, destined solely to the education of military surgeons. The building, which is spacious and elegant, is composed of three divisions; one of these is occupied by the professors and their servants, and contains the academical college: the second contains the anatomical museum, that of natural history, the cabinet of instruments, and the anatomical theatre: the third contains the military hospital, the dispensary, and the chemical laboratory. Each of them has a handsome court; that of the last is laid out as a garden, in the middle of which is a chapel, where the patients go to hear mass.

‘ The cabinet of anatomical preparations in wax occupies twelve rooms; it was prepared at Florence under the direction of *Fontana*, and is complete in its kind. Above each piece, is an engraving, which represents it, enclosed under the same glass. The lymphatic vessels and the nerves are particularly deserving of notice. The library, though small, is chosen with great judgment.

‘ The Military Hospital occupies a considerable part of the edifice of the academy. The founder was desirous at

once of bringing the patients within the reach of necessary help, and of procuring to students every means of instruction. It contains twelve hundred beds, three feet asunder. The wards are furnished with ventilators; which, indeed, were wanted, for the windows are too few and small, and placed too high.

‘The school of the academy contains one hundred pupils, twenty-four of whom receive some trifling appointment, and lodge in the house. The course of study continues two years, at the end of which the students are examined; and if found properly qualified, they obtain the degree of Doctor in Surgery, and the first vacant place in a regiment.

‘A few words regarding the Dr. *Franks*.

‘Dr. *Peter Frank* has carried with him to Petersburg the admiration and regret of all the students of the school of Vienna. He is quoted from the chair, on the benches, and at the bedside of the sick: his authority is always a law, which every one submits to with veneration. He is the author of an excellent practical work, the seventh volume of which has made its appearance during the present year, *Epitome de Morbis hominum curandis*—of a valuable treatise on medical police, *Medicinische Polizei*, &c. in 4 vols. 8vo; and of a great number of detached treatises and academical memoirs. I listened with much pleasure to Dr. *Hoger*’s account of this great man. Dr. H. had been Dr. Frank’s assistant. Amongst other facts, he related a case of *opisthotonos*, which is worth mentioning. A man was brought to the General Hospital, who had been attacked with this dreadful malady: but no information could be obtained as to his former state. Dr. *Frank* employed in vain all the known remedies; the patient suffered repeated attacks of horrible convulsions. Recollecting at length, that he had witnessed a similar disease at *Pavia*, caused by a pin lodged in the sole of the foot, Dr. *Frank* examined scrupulously every part of the body, and at length discovered a very small nail which had pierced the ball of the great toe: scarcely was this extracted, when the convulsions ceased, the disorder diminished in consequence, and, in a few days, the patient was perfectly restored.

‘ Dr. *Frank* has sometimes given with success, in the *diabetes mellitus*, an emulsion containing three drops of the tincture of cantharides in fix ounces; the dose, a spoonful every hour, gradually increasing the quantity. His treatment of the saturnine colic is very similar to that of M. *Pinel*: sometimes he employs a small bleeding; but he always gives some mucilaginous drinks, as the common emulsion, with ten or twelve grains of the sulphate of alumine (rock alum). In the palsy that is often the consequence of this disease, he administers, not the camphor which Huxham boasts of, but mercurial frictions in small quantities. For the tape worm he has a remedy which rarely fails of success, and which is as follows:

℞. Stanni anglicani granulati - ʒi
 Extracti amari - - - - ʒij
 Pulveris jalapii - - - - ʒij

Mellis depurati q. s. ad Electarium, cujus capiat æger n. m. m. secunda quaque hora.

‘ Dr. *Joseph Frank* (who must not be confounded with the one we have just quitted, as has been done by a distinguished professor of the Parisian school) is the worthy son of the above. He is at present clinical professor at Wilna, as his father is at Petersburg. Although thoroughly instructed in the languages and accessory sciences, and, generally speaking, well skilled in physic, he is, however, far inferior to his father in point of practical knowledge. He is the author of a work entitled *Ratio Instituti Clinici Ticiniensis*; of several works, both in Italian and German, on the Brunonian system; and of one entitled, *Erregungstheorie*, which differs in no respect from the system of Brown, except by some modifications and additions. He has also published in German a *Toxicology*, or Treatise on Poisons, 1 vol. 8vo; and a *Voyage to Paris, London, the rest of England, and Scotland, &c.* in 2 vols. 8vo.

‘ Dr. *Joseph Frank* warmly espoused and defended the Brunonian system at its birth; he afterwards modified it, in his *Erläuterungen der Erregungstheorie (Illustration of the Theory of Irritation)*; and of late he has renounced it altogether, and has become the apostle of the philosophy of idealism, or rather realism. On his return from France,

his pupils were astonished to see him prescribe vomits and purges, which he had before totally banished from his *materia medica*. He told them that the experienced physicians of France whom he had attended, employed those medicines with success. He witnessed at Liverpool Dr. Currie's treatment of typhus by immersion in cold water, or by the cold affusion over the whole body. Upon his return to his own hospital, he tried this practice; but, if I may believe his pupils, his attempts were not very fortunate. I read, however, in the second volume of his *Travels*, six cases of patients cured by this mode of treatment.

'Dr. J. Frank is, perhaps, the physician who has prescribed the largest doses of the most active medicines. A prescription of Drs. Walther and Lacher, his pupils, may serve to give an idea of this. The following is a formula in frequent use at the General Hospital, in cases of intermittents of a malignant character.

R Tinct. Aquos. Canellæ	- -	℥ij
Tinct. Thebaic. Echarð (quæ)	}	℥iij vel 3½
continet opii gr. j. in guttis iij		

'Fifty drops of this mixture are given every five minutes at first, and the dose gradually increased to two hundred and fifty drops. I will only add one fact respecting the practice of Dr. Joseph Frank: it was communicated to me by Professor Lacher. A patient was brought to the General Hospital, without sense, and labouring under frightful convulsions and violent vomitings. No information could be obtained as to his former state, nor the cause of his present situation. Frank, supposing he had been poisoned, gave emetic tartar in large doses. The vomiting still continuing, and the danger seeming to increase, he directed flannels to be soaked in sulphuric æther, and to be wrapped round the body of the patient; the flannels to be moistened afresh with æther, as fast as it evaporated. This was followed punctually for a day and a half together, and the patient was restored to life; but he continued for some time weak and valetudinary*. The cost of the treatment in this case was about two hundred florins per day. Several other cures of a similar kind gave rise to a report

* 'It was discovered afterwards, that the patient had taken an extraordinary dose of opium.'

which was very current at Vienna, that Dr. *J. Frank* had nearly ruined the General Hospital, reports which jealousy and calumny took pains to make believed.

‘ Among the information I obtained on my visit to the University of *Landshut*, I may mention the following.

‘ Professor *Walther* has operated at *Bamberg* in thirty cases of cataract, two only of which proved unsuccessful; the first of these saw very well for three weeks, and then a secondary cataract took place. The Professor gave himself the trouble to shew me the handsome arsenal of surgery. He operates with the knife of Dr. *Beer*, which resembles that of *Wenzel*; with this difference, however, that the blade expands more quickly, and at a less distance from the point, so that the incision is made before the point of the instrument reaches the angle of the eye, and without the necessity of pressing it downwards, which often occasions the escape of a portion of the vitreous humour. Instead of an elevator and a depressor of the eyelids, he merely uses the fingers of an assistant, together with his own*.

‘ M. *Walther* employs a similar instrument, but of a larger size, in order to remove staphyloma. I saw him operate on one of a very large size in a child, with much success. He shewed me, 1. M. *Adam Schmidt*’s compressor for the varicose lacrymal sac; and a needle of the same surgeon for making an artificial pupil. This is sharp on both edges, and slightly curved on its flat side. M. *Schmidt* employs it in the following manner. He introduces it into the anterior chamber, by piercing the cornea at the place where we enter in the operation of extraction; then he insinuates the point of the needle into the iris at its junction with the sclerotica, from which he separates the iris, dividing it so as to leave a sufficient space to admit the rays of light. M. *Walther* has often done this operation successfully, but in *Beer*’s method, which is this. He makes a section in the cornea with his cataract-knife, though of rather a less size than for extraction. He

* ‘ The Germans are richer in works that treat professedly of diseases of the eyes than other countries. The Treatise of *Scarpa*, it seems, is held but in moderate estimation by the professors of Vienna, who very rarely practise depression of the cataract.’

then seizes the iris with the forceps, and cuts off with the scissars a sufficient portion of it. This process appears to me less hazardous, and more sure, than that of *Schmidt*.

‘ In order to detach the adherent cataract, *M. Beer* has a small hook which it would be difficult to describe. *Weydmann*’s instrument for the cataract is straight throughout a great part of its extent, in order that the puncture of the cornea, at the point opposite to the point of entrance, may be made before the section is begun, which is soon effected afterwards. By the sudden expansion of the blade near the handle, the aqueous humour is not so readily discharged. This instrument, in *M. Walther*’s opinion, is very convenient where the patient withdraws the eye the moment the section is begun; as in case the aqueous humour runs off suddenly, and the iris applies itself to the cornea, there is less danger of wounding it with this instrument than with either those of *Wenzel* or *Beer*. As to the knife of *Arnemann* (of Goettingen), it is never mentioned, but in the lectures.

‘ *M. Walther*, a pupil of *Joseph Frank*, and consequently a disciple of *Brown*, whose practice he still in some degree follows, has renounced the Brunonian doctrine for the sublime philosophy of nature. His lively imagination has seized with avidity a brilliant theory which embraces the universe, and which, decomposing it into its ultimate elements, and remounting by analysis to first causes, seems to explain more satisfactorily every phenomenon. He shewed me at least twenty volumes, which have been already published on this philosophy, which proudly styles itself the philosophy of *realism*, by way of distinction from that of *Kant*, which is named *idealism*; and from that of *Fichte*, which they call the *philosophy of self*!

‘ *M. Fuchs*, professor of the theory and practice of chemistry and of physical geography, lectures in chemistry according to the Synoptical Tables of *Fourcroy*, and in mineralogy after *Werner*. *M. Fuchs* is at present occupied with his researches on the *Audronia*. By this term, as you perhaps know, is meant the philosopher’s stone, the discovery of which was reserved for *M. Winterl*, a chemist of *Pest* in Hungary. This gentleman pretends

that this earthy substance, which is extracted from carbonate of potash, and which, according to M. *Fuchs*, is nothing but a mixture of flix and argil, has amongst other properties, when united with the sulphuric acid, that of dissolving gold, of changing platina into gold, tin into silver, &c. We shall suspend our faith in these wonders, till the chemist of *Landshut* has confirmed the marvellous virtues of the *Audronia*, or till it have been put to the proof in the crucibles of Vauquelin.

‘ The *Clinical Institution* of Professor *Roeschlaub* is not at present in activity, as, since Bavaria has become the theatre of war, its funds have failed; a cause which has prevented the organization of several most useful establishments. *Roeschlaub* is at the head of the Bavarian Military Hospital. He uses gelatine, aromatized with the tincture of cinnamon, in intermittent fevers, diarrhœas, and the convalescent stage of dysentery. He gives the preference, however, to opium in these cases, and which he uses in all intermittents, without waiting, or beginning with any evacuant; and commonly in seven or eight days the patient is cured. The dose is from four to six drops of *Echard’s* tincture of opium, in some vehicle, every hour, so as to give daily, to a strong patient, about two scruples of the tincture; and half a dram to the weak and convalescent. He pretends never to have seen any inconvenience from this method. I have remarked the same at Toulouse and Montpellier; with this difference, however, that in the South they give the cinchona instead of opium, without any previous exhibition of vomits or purges. At *Gand*, and at *Ostend*, such of our fever patients as had been purged several times, were observed to be particularly subject to dropical affections afterwards.

‘ I observed to M. *Roeschlaub*, by way of objection to his theory, the impossibility of reducing within it venereal affections: these belong, he replied, to the catalogue of local affections, which can neither be termed *sthenic* nor *asthenic*, because the principle of life is not disturbed in them.

‘ M. *Schrank* is well known in Germany, by his *Flora Boïca*, and by his *Fauna Boïca*, or History of Bavarian Insects. The celebrated *Willdenow* has just given his name

to a species of the genus *Mimosa*, of which Linnæus had made a *Camelina*: M. Wildenow calls it *Mimosa Schrankia*. Happening to take notice of a beautiful stalk of the *Atropa Belladonna*, he informed me, that one of his friends, a physician, upon being called to a family that had been poisoned with the fruit of this plant, succeeded in recovering all of them by making them take freely of vinegar.'

Memoir on the Analysis of Sweat, Urine, and Milk: by
M. Thenard.

[Continued from page lxxxv.]

'PART II. *Of the Acids of the Urine.* These acids are, 1. the *uric* acid, which often gives birth to calculi of the bladder: 2. the *benzoic* acid: this rarely exists in the urine of adults and old persons, but is frequently contained in that of infants. Besides these, we are compelled to admit the presence of a third acid, since the urine reddens strongly and constantly the tincture of turnsol, an effect that cannot be attributed to the uric acid, for this has no action on that colour; nor to the benzoic, this being only found in certain circumstances that are not yet fully understood.

'What is this new acid? This is the second point of the inquiry, and which I shall now attempt to discuss. It is generally thought at present that the acid in question is the *phosphoric*. This opinion rests on the presence of a considerable quantity of phosphate of lime in urine, which being insoluble by itself when in the neutral state, becomes very soluble, and even deliquescent, with an excess of acid. The opinion is further strengthened by the following consideration: excepting the phosphates of lime, of soda, and of magnesia, there are only found in urine the sulphates of potash and of soda, and the muriates of soda and of ammonia; and none of these salts are decomposed by the acidulated phosphate of lime: their acids, the sulphuric and muriatic, could not exist in the free state in urine without changing the neutral phosphate of lime into the acidulous phosphate, by detaching a portion of its base. If therefore it is not the phosphoric acid that

is the solvent of the phosphate of lime of the urine; it must doubtless be a weak acid, and probably one of the nature of the vegetable or animal acids.

‘ Nothing, in fact, proves that this may not actually be the case. I add, that this hypothesis appears to me more admissible than the former; for, in order to admit the existence of the acidulous phosphate of lime in the urine, it must be supposed that a portion of one of the phosphates of the blood when it arrives at the kidneys is decomposed; that the phosphoric acid is in the free state, or at least constitutes with the phosphate of lime an acidulous phosphate, although in presence of the soda of the blood and of the base of the decomposed phosphate, both of which appear then not to form any new combination, and to be taken up again with the residue of the secretion by the venous system, in order to be carried back into the circulation. This supposition is highly improbable.

‘ It may be answered, indeed, that bodies under the influence of the living principle comport themselves far otherwise than when deprived of it; and that consequently there may take place in the living animal œconomy decompositions very different from any we yet know. But besides that this answer, although exact, proves little in favour of the case before us, it may be employed, in a certain degree, to retort the argument, by saying, we have no alleged example that salts are so decomposed in the animal œconomy, as that their acid and alkali remain in presence of each other, without uniting; on the contrary, that it is demonstrated that animal matters, those especially which exist in the blood, the fibrine and the albumen, are transformed into others in traversing certain organs: thus in the mammary glands, they are changed into sugar of milk, caseous, butyraceous, and extractive matter; in the kidneys, they form *urée*, uric acid, and occasionally benzoic acid. If, therefore, they form constantly one or the other of these acids, it is possible they may form a third which may combine with the phosphate of lime, and hold it in solution. Such are the reflections which have led me to examine the acid of urine. I shall now relate the experiments I have made to discover its nature.

‘ After having employed various means (which it is needless to particularize, as they were unsuccessful, at least directly so), I evaporated about twenty pints of recent

urine nearly to dryness, and in a water bath, that the urée might not be decomposed: the residue strongly reddened the tincture of turnsol; I then treated the residue several times with cold alkohol of thirty-six degrees of strength.

‘ By these means, I dissolved the greatest part of the residue; but it was impossible to dissolve it entirely, whatever quantity of the alkohol was employed, even with the aid of a gentle heat: I then mixed the different liquors together, and concentrated them at a low temperature to a syrupy consistence. Of this I first diluted a portion with water, and added to it lime water and ammonia. No precipitate took place; or at least if there was any, it was so light that it did not appear for a long time after the mixture was made. I calcined another portion of it; not only was the residue not acid, but, when treated by water, lime water gave no proof of the least atom of phosphate in the solution.

‘ The part that was not dissolved, and which contained much carbon, left, upon complete incineration, only a few traces of phosphate of lime.

‘ It seems then from hence, that urine contains, besides the uric acid, another acid of at least a double radical, and which I strongly suspected to be the acetous, because I had already found this acid in other of the animal fluids; and because the acetous acid exists in almost all vegetables, and is formed in almost all the decompositions which organized substances undergo. To verify this suspicion, to the remainder of the matter containing the acid I added baryt-water; I then evaporated to dryness, with a very moderate heat, and treated the acid afresh with alkohol. The whole was thus dissolved, except a yellow powder, which was truly acetate of barytes.

‘ Thus, this experiment leads us to believe that there is acetous acid in urine; but it does not prove that there is not also phosphoric acid, since urine evaporated in a water bath, and treated with a large quantity of alkohol, always leaves a residue that is slightly acid, and it might be said that this acid was the phosphoric. In order to demonstrate that it was not really the acid of phosphorus, I could not have recourse to calcination here; for the residue, from its containing phosphate of ammonia, would

not have failed to give me phosphoric acid : it was necessary therefore to employ synthesis.

‘ Having saturated with potash the extract of urine evaporated to dryness with the precautions before described, and added a little vinegar, and then treated it with alcohol, I obtained the same results as those I have mentioned ; namely, the portion which was not dissolved after several affusions of alcohol, was acid. This proof, I know, may still be questioned ; for, if the phosphoric acid existed in urine, it would, like the acetous, be in part retained by the salts contained there, and would become insoluble in alcohol. But if we consider that the existence of the acetous acid in urine appears certain* ; that nothing demonstrates the presence of the phosphoric acid in it ; that the greater part of the disengaged acid of urine that is evaporated to the consistence of syrup, dissolves in alcohol ; and that the whole of this acid, thus dissolved, is the acetous ; lastly, if we recollect that the residue is slightly acid, and that saturated with potash, afterwards acidulated with vinegar, and treated anew with alcohol, it remains equally acid as before ; in calling to mind, I say, all these experiments, and comparing them together, I believe we shall acquire such a degree of certainty, that we shall be fully convinced it is the acetous acid alone which dissolves the phosphate of lime in urine, and which gives it the property of reddening the tincture of turnsol.

‘ But in order to render this last consequence still more evident, I ought to demonstrate, more directly than has been yet done, that the benzoic acid is really not a constant principle in urine. For this purpose, instead of employing sublimation with or without excess of another acid, (a method always inexact, since the benzoic acid combined with ammonia is carried off more or less by the water which evaporates) I added lime before commencing the evaporation, and treated the extract with alcohol.

‘ In fact, we dissolve by this means, besides the benzoate

‘ * I believe that in the evaporation of urine in the water bath a small quantity of the urée is decomposed, and there is formed ammonia, and perhaps a small portion of acetous acid. Supposing this to be the case, it still remains very probable that the acid of the urine is the acetous acid, and no other. For we may adduce, in favour of this opinion, not only the reasons already given or which will hereafter be suggested, but also the tendency which the urée has to transform itself into acetous acid.

of lime, urée, muriate of ammonia and of soda, and acetous acid. But if we transform the alcoholic solution into a concentrated aqueous solution, the acids added afterwards soon manifest the presence of the benzoic acid, if any exist in the solution.

‘ Thus, in making the analysis of urine, we ought first to endeavour to detect the benzoic acid by this process, or some similar one. If by this means we discover no traces of it, which is most frequently the case, we may conclude that none is present. Afterwards, having evaporated in the water bath another portion of urine, and having thus determined the quantity of water which enters into its composition, the residue must be treated several times with alcohol of thirty-six degrees: by this means, the urée, the muriate of ammonia, the muriate of soda, and the greatest part of the acetous acid, will be dissolved. The mixture of these different matters is then to be divided into three parts: from the first part the acetous acid is separated by the means already mentioned; from the second, we separate the urée by concentrated nitric acid, and from this the urée is again separated by the carbonate of potash, and alcohol*. Lastly, the third part serves to determine, by sublimation, the quantity of sal ammoniac and of sea salt. In this sublimation, the urée is destroyed, the acetous acid is volatilized, the sea salt remains, and must be estimated; the sal ammoniac sublimes and is collected; and as this is always mixed with black matters, and may otherwise contain a small portion of carbonate of ammonia, it is to be purified by solution in water, and evaporation.

‘ The substances in urine, then, which dissolve in alcohol, are five in number; acetous acid, benzoic acid, muriate of ammonia, muriate of soda in part, and urée. The insoluble matters are more numerous: we may reckon at least eight such; namely, four phosphates, two sulphates, muriate of soda, and uric acid. On treating these eight substances that are insoluble in alcohol with water, we dissolve the phosphates of soda and ammonia, a very little of the phosphate of magnesia, the muriate of soda, and

* ‘ Pure urée does not crystallize, but only when in combination with certain salts. I believe, but am not certain, that it renders many salts soluble in alcohol, which, of themselves, are not soluble in it. It would be easy to verify this on the muriate of barytes.’

the sulphates of potass and soda, which are discovered by their crystals, and which, to a certain point, may be separated from one another by the solutions of platina. The presence of phosphate of magnesia is discovered by potass, which precipitates a small quantity of this earth.

‘ The substances insoluble in water are, then, the phosphate of lime, phosphate of magnesia combined with phosphate of ammonia, and the uric acid, which last is separated by the ordinary means. In other respects, this method differs but little from those which have been employed by other chemists; and I should not have pointed it out here, even in the concise manner I have done, were it not intimately connected with the subject under consideration.

‘ **PART III. *Of the Acid of Milk.*** This fluid, immediately as it flows from the mammary glands, reddens paper stained with the tincture of turnsol; it contains consequently a disengaged acid. When I discovered this fact, eighteen months ago, I attempted in vain to obtain the acid pure, in order to examine its properties; and since this period, all the attempts which have been made for the same purpose have been equally unsuccessful.

‘ Although every thing leads us to believe that it is the acetous acid, yet it is the same with regard to the acid of milk as those of sweat and urine—in order to pronounce definitively as to its nature, it was necessary to insulate it, and then to combine it with salifiable bases. This I accomplished by a method analogous to that which I employed to obtain the acid of urine: 1. by evaporating the milk to dryness: 2. treating the residue with water of barytes to saturate the acid: 3. evaporating anew to dryness: 4. treating it with alcohol to dissolve in part the extractive matter, and above all to collect the caseous matter, so that this should not remain suspended in the water: 5. macerating with water what the alcohol had not dissolved, afterwards concentrating the filtered liquor, and distilling it with phosphoric acid. By these means, I obtained in the recipient a liquor which had all the properties of the acetous acid.

‘ It results then, from the various experiments described, 1. that urine probably contains no disengaged phosphoric acid, but that acetous acid exists equally in the urine, in

milk, and in sweat: 2. that sweat contains, besides, much water, muriate of soda, and a small quantity of animal matter, with slight traces of oxide of iron and phosphate of lime.

‘ It is probable that the acetous acid exists in many other animal substances. Various observations lead me to believe that it will be found in cantharides; the analogy between the bomic and formic acids with vinegar has been already suspected; and I should venture almost to generalize this idea, and say that it exists in almost all animals, as it does in the sap of almost all vegetables; at least it is allowable to affirm that it is the acetous acid which nature most readily forms: its principles have so strong a tendency to unite, that we can scarcely ever disturb the equilibrium of the molecules of organized bodies, without producing more or less of it. Whether the decomposition be rapid or slow, it is equally formed; witness the distillation of vegetable and animal substances; their treatment by the nitric or oxygenated muriatic acids; their spontaneous decomposition; and their transformation into mould or adipocire.

‘ In faulty digestion in the stomach, we know that the aliment turns sour; and this is owing to the acetous acid. Nevertheless, in many circumstances, its production has not been sufficiently ascertained. It remains to be seen, whether it exists in the milk of every species of animals; whether it is to be found in the sweat of all, and whether the sweat is identical in all animals; lastly, whether it is not in the state of acetate in urine which is alkaline. This inquiry I propose to make hereafter: the result I shall submit to the Institute, if judged worthy of their attention.’

MEDICAL REFORM.

TO THE EDITORS OF THE MED. AND CHIR. REV.

Horncastle, Nov. 5th, 1807.

Gentlemen,

I HAVE to request a place in your next Review for the answer of Mr. Sergeant Williams to the several queries which I had the honour to submit to his consideration by desire of the Committee appointed to conduct the Medical Reform.

The total want of power in all the medical Corporations of the United Kingdom over the *Provincial Faculty of every description*, is a truly lamentable fact, nor have they, I believe, more sway over apothecaries, druggists, midwives, and empirics in the capitals. It appears that their controul even there is limited to doctors in physic and surgeons, the two classes which certainly stand least in want of correction.

These constitute so small a portion of the aggregate body, that the views of the Crown in founding the Colleges are entirely defeated by a change of circumstances since their erection. The most dangerous practitioners are the little apothecaries, the druggists, the midwives, and quacks, who, if collected together, would, I am persuaded, form a majority above all credibility. Until they are brought under proper subjection, the practice of physic will continue to be uncertain, dangerous, and, in many cases, hurtful to the people. Surely then, as the learned Sergeant observes, "*this mischief ought to be remedied by the legislature.*" The faculty, it is true, are punishable *pro mala praxi*, and probably in no other way; but this is an offence at common law, involving equally the best and the worst members; for however humiliating the reflection, the regular faculty are as liable to such proceedings, as the most dangerous empiric. The law knows no difference between them. An unavailing attempt was lately made at the Old Bailey to punish an apothecary *criminally* for supposed misconduct in the exercise of a very delicate part of his profession; and from the arguments of counsel on the trial, as well as from Lord Ellenborough's address to the jury, it is ascertained that, in order to establish the

plea of criminality, the accused must be convicted of such gross ignorance, negligence, and cruelty, as scarcely any practitioner in possession of his understanding can ever be guilty of.

In other countries the medical police constitutes a primary object of solicitude; but in these realms, for want, as I conceive, of the matter being properly understood, it is regarded with indifference. When the dangerous state of medical practice and the disorganized condition of the healing art are generally known, I trust that the popular feeling will be strongly excited in favour of a substantial reform, such as will secure to invalids in all cases the assistance of *able practitioners, and genuine remedies*. The legal opinion now published must contribute in no small degree to arouse the faculty to a true sense of their degraded situation; for surely nothing can be more grating to a liberal mind, than to find that, after an expensive and protracted course of study, he remains as unsupported as the most notorious impostor.

It would be desirable to propose many other questions to the gentlemen of the law, and indeed to engage them in drawing out a medical constitution for the *provincial divisions of the United Kingdom*; but until a more ample fund is procured, little of importance can be attempted by the Committee. The regulations of the College of Physicians and Surgeons at New York, lately noticed in your Review, and the recent medical establishments in France, would afford many useful hints. When the Colleges of Physicians and Surgeons were originally founded by Henry the VIIIth, they were probably well adapted to the rude state of medical knowledge in these kingdoms; but circumstances are so much changed since his reign, that very different measures are now required, for the security of invalids, and to enable the British faculty to maintain a superiority over their brethren in other states.

The colleges were evidently established to protect the ignorant and unwary against impostors, by holding up to view such as are deserving of confidence. In the lapse of time, things have been so entirely changed, that these venerable piles are no longer adapted to their origin. Let us, then, so far profit by the example of other countries, as to make our establishments what they were always intended to be,—watchful guardians of the national health.

I conceive that if proper encouragement were given to some respectable lawyer, he would be able with little difficulty, from our own statutes, and the sources pointed out, to correct and adapt the institutions of the British dominions to the present improved state of medical science. For this purpose, the powers of the several colleges will, as I conceive, require to be extended throughout their respective kingdoms, the provisions, according to the language of the Dublin College of Physicians, being so modified as to meet the existing difficulties.

Objections have been made to the proceedings on medical reform, under the supposition that they sprang from an improper source. If, however, the practice of medicine be imperfect in the British dominions, as these very persons admit, some steps ought to be taken for its correction: and whether they originate with individuals, who suffer from the defects, or in corporate bodies, who, in what relates to the country, must derive their information from others, is of little consequence, provided an effectual remedy be speedily applied. The Colleges of Physicians and Surgeons were originally instituted through the influence of private persons, for the benefit of their respective capitals; and had the members been liberally disposed towards the country, many opportunities might have been found, in a period of almost three hundred years, to have secured all that we are now trying to obtain. I am therefore of opinion, that the associated faculty are authorized, on that ground alone, to take the affair into their own hands, and endeavour to obtain a redress of their own grievances, since they have no reason to believe that their sufferings and degradation have excited any commiseration from the ruling powers. It appears, however, from the professional opinion of Mr. Sergeant Williams, that the provinces are neither subject to the controul nor supervision of the colleges. Consequently, while the medical practitioners in those parts are endeavouring openly to serve their fellow creatures, they cannot justly expose themselves, by so doing, to the charge of illiberality. Respectful though unavailing applications have been repeatedly made, both personally and otherwise, to the members of the London College of Physicians. The answers of the Dublin and Edinburgh colleges are more favourable, as

may be seen by the different communications, inserted in the Medical and Chirurgical Review.

To conclude, the associates have always been anxious to procure the co-operation of the public bodies, and were prepared to make great sacrifices to obtain it, although they can never consent wholly to abandon into other hands a measure of such infinite importance to themselves, and the community at large.

I have the honour to be, Gentlemen, &c. &c.

EDWARD HARRISON.

“ A Case on Medical Reform drawn up for the Opinion of Mr. Sergeant Williams by Greene, Tennant, and Harrison, of Gray’s Inn, Solicitors.

“ It has long been considered by many respectable physicians and other practitioners in medicine as a grievance calling for legislative interference, that the practice of physic in the country has principally fallen into the hands of illiterate and unskilful persons, who have had no regular education to qualify them for the profession, to the incalculable injury of the community, and to the great discredit of the science itself. Within these late years this subject has attracted the attention of a society of gentlemen in Lincolnshire, amongst whom Dr. Harrison, a physician of long standing and extensive practice, has at their desire particularly interested himself; and from a series of enquiries which have been instituted in that county, it appears that not more than about one in nine of those who practise for gain as physicians, surgeons, men-midwives, apothecaries, druggists, or empirics, have passed through any regular course of education, to qualify them to practise in their several situations; and, from subsequent enquiry, there is good reason to believe that the state of medical practice is equally defective in other parts of the British dominions. And even of those who have had what is called a regular education, only a very small proportion are equal to the responsibility which they take upon themselves. Many physicians and surgeons in London of the first eminence, and others who, from their rank or political situations, may be supposed most capable of promoting a remedy for this evil, have concurred in the opinion that the interference of the legislature is become

necessary; amongst whom Sir Joseph Banks has taken an active part. Lord Henry Petty, when Chancellor of the Exchequer, was also impressed with the same belief, and evinced his desire of promoting a reform on this subject, by procuring the licence of government that all correspondence with the provincial practitioners should pass free of postage; and, in consequence thereof, a very extensive circulation has taken place of such questions as were calculated to procure from the regular practitioners, throughout the United Kingdom, information whereon to ground such regulations as may be deemed expedient and adequate to the object. Those who have undertaken this labour did not enter upon it without foreseeing very great difficulty and much opposition from many practitioners, both regular and irregular; but their views being confined to such regulations only as should tend to a gradual correction of the present abuses, and render the profession more respectable, by preventing irregular persons from entering into it in future, without disturbing those who are at present practising (however irregularly), they hope that a large majority of the more enlightened and respectable part, as well of their own body as of the community at large, will, when their minds are once drawn to the subject, concur with them in the propriety of *some* regulations being made.

“ It was natural for these private gentlemen to endeavour, in the first instance, to obtain the influence and interference of the regular body of the College of Physicians. Accordingly different applications have been respectfully made to them, both collectively and individually. But it was scarcely expected that that body (however respectable the members of which it is composed) would, as a body, hazard any innovation, which, as it appeared to them, might eventually endanger their own constitution and powers. And it is but fair to suppose that many of them, who have attained high rank and consequence as practitioners in London, not having before their eyes the mischiefs which those who practise at a distance from town daily witness from the abuses alluded to, may not deem it expedient to make the attempt, or may be averse to it from principle. Be that as it may, the college, as a body, hath hitherto declined either to bring forward under its own immediate sanction any specific regulations for

these abuses, or to give its assent to any which others have proposed.

“ As a preliminary to the consideration of any plan whatever, it seems incumbent on those who make the attempt to ascertain what are the existing powers of the present College of Physicians, and whether those powers, if exercised to their fullest extent, would be sufficient to the objects in view. Their authority, it seems, rests on an Act of 3d Henry VIII; a charter of incorporation granted by that King, confirmed and extended by the statute 14th and 15th of his reign, chapter 5th, in which the charter is copied, and other Acts 32d Henry VIII and 1st Mary. The principal Act of 14th and 15th Henry VIII authorizes the election of a president and elects of the physicians of London, and extends the powers of the college by the following clause.

“ ‘ And where that in dioceses in England out of London it is not light to find alway men able to sufficiently examine after the statute such as shall be admitted to exercise physic in them, that it may be enacted in this present parliament that no person from henceforth be suffered to examine or practise through England, until such time as he shall be examined at London by the said president and three of the said elects, and to have from the said president or elects letters testimonial of their approving and examination, except he be a graduate of Oxford or Cambridge, which hath accomplished all things for his form without any grace.’

“ By a bye law of the college, 1st February 1572, the faculty were divided into four classes, viz. First, *Fellows* or members of the college. Second, *candidates* for election into such fellowship. Third, *licentiates*, or persons having licence to practise physic, who are not considered as members of the college; and, fourth, *extra licentiates*, or physicians who reside more than seven miles from London.

“ The first class consists of a comparatively small number of the practisers in and about London, who are as jealous of their rights as they are careful to conceal the bye laws and regulations of their body. And as the right of election to this body rests with themselves, they are extremely limited in their selection of new members, confining them to graduates of Oxford, Cambridge, and Trinity College, Dublin.

“ The second class consists of those who are candidates

for admission; and it is the general custom not to admit to this honour any practitioner who resides more than seven miles distant from London, though, in consequence of some doubts raised as to the legality of such a custom, they have in a few instances deviated from it, merely, as it is supposed, to prevent the legality of their proceedings being drawn into question.

“It is supposed that five or six fellows are at this time practising more than seven miles from London.

“The third class of licentiates comprizes the great bulk of practising physicians in London. The fees of admission, which are (oddly enough) *larger* than those for the admission of fellows into the corporation, raise a considerable revenue. But how it is applied by the college does not generally appear.

“The fourth class contains the extra licentiates, and is open to persons not necessarily doctors in physic, who practise more than seven miles from London. Although the college suffer physicians in the country to become fellows and licentiates, probably these licences are of no validity at a greater distance than seven miles from London. Admission into this class is very easily obtained, and is open to doctors with purchased diplomas equally with regular graduates. Hence the respectable provincial physicians seldom apply to be made extra licentiates, conceiving such a connexion with the college to be rather disreputable than otherwise.

“But as far as relates to the objects above pointed at, either these powers, or the practice of the college under them, are very deficient, for they have never attempted to enforce the right of questioning any one, who calls himself a doctor or physician, or practises in any of the branches of physic more than seven miles from London, either regularly or irregularly, nor do they call upon any one to take out his licence to practise. Such as choose to apply for it, have it very much of course on paying their fees; but it is merely optional with themselves, whether to call for it or not. Thus it is obvious that no check is imposed by this body on the irregularities complained of, and their power to do it, if so disposed, appears at least very questionable. To shew the want of these powers is an object to those who seek for reform.

“A considerable proportion of the provincial physicians

have had their education and taken their degrees regularly at one of the Scotch Universities. A very few of them have thought it necessary to become licentiates or extralicentiates under the College of Physicians in London, but a large majority practise without such licence. And no instance has ever been known of any interference by the college with *any practisers* beyond the seven miles from London. It has been, however, a practice much to be lamented in some of those Universities to grant diplomas for money, or at least without requiring from the *candidates* the attendance and duties of a regular education, or even to undergo any previous examination. But doctors of this description cannot be considered as having accomplished (in the language of the Act) "all things for their form without any grace," and this appears an evil which ought to be remedied.

"The laws and constitution of the college with respect to the admission of its town members are stated at length in the case of Dr. Archer and Dr. Fothergill, 5th Burr 2740. That case appears to have been decided on the ground that those gentlemen having submitted to the bye laws of the college, by becoming licentiates under them, and as those laws prescribe *election* as the means of admission into the college as fellows, it was not in their power to dispute the validity of the bye laws.

"The case of Dr. Stanger, 7 Term reports, 282, brought the same question before the court; Dr. Stanger having been previously admitted as a licentiate, though it appears to have been decided on broader grounds than the former, as it seems to have been conceded in the course of the argument, that, if the bye laws were illegal, Dr. Stanger was *not* bound by having subscribed to them.

"But it may be a different question, whether those who have gone through a comprehensive course of education in the Scotch Universities, even much more full and complete than the English ones admit of, and have taken their regular degrees there as doctors of physic, and whose talents and characters are unimpeachable, have not under the Acts of Union a right to demand to be examined, in order to their being elected as fellows of the college, they having in no respect bound themselves to the bye laws of that college by becoming licentiates under it.

“ By the Act of Union, 5th Anne, chap. 8, sect. 3d, ‘ It is ordained, that the universities and colleges of St. Andrew’s, Glasgöw, Aberdeen, and Edinburgh, *as now established by law*, shall continue within this kingdom for ever.’ But it is observable, that the preamble to this clause applies to the ‘ security of the Protestant religion, and of the worship, discipline, and government of the church, as above established;’ and the clause appears to have no reference to the practice of physic, although some of the colleges apply principally, if not wholly, to that science; yet the words of the enactment seem extensive enough to embrace and support the whole of those establishments.

“ By the same Act, chap. 8, art. 4, it is provided, that there shall be a communication of all other rights, privileges, and advantages, which do or may belong to the subjects of either kingdom, except where it is otherwise expressly agreed to in these articles.

“ Art. 25. That all laws and statutes in either kingdom, so far as they are contrary to, or inconsistent, with the terms of these articles, or any of them, shall, from and after the Union, cease and become void; and shall be so declared to be by the respective parliaments of the said kingdom.

“ Art. 6th. And lastly, her majesty enacts and declares, that all laws and statutes in this kingdom, so far as they are contrary to, or inconsistent, with the terms of these articles, shall, from and after the Union, cease and become void.

“ The diplomas granted in the University of Edinburgh state as follows :

“ ‘ Nos academix Jacobi regis Edinburginx, &c. professores volumus, &c. gradum nempe doctorem, A. B. consecutum esse eique amplissimam potestatem medicinam ubique gentium legendi docendi faciendi concessam aliaque omnia privilegia immunitates juraque hic aut usquam alibi ad doctoratus apicem evectis concedi solent—cujus rei quo, &c. &c.’

“ Upon a review of the several acts of parliament, and cases referred to, with the bye laws mentioned in those cases, you are requested to advise on the following points.”

[The Questions, together with the Answers of Counsel, will be given in our next.]

TO THE EDITORS OF THE MED. AND CHIR. REV.

Gentlemen,

NO one who is in the habit of reading your valuable publication, but must be aware that a leading feature in it is an anxiety for the extension of medical knowledge on the most impartial and liberal principles; I need, therefore, make no other apology for requesting the insertion of the following matter, than the importance of the subject it alludes to; for, whatever holds out but a shadow of relief for one of the most severe afflictions that suffering humanity can labour under, cannot be considered undeserving of notice. The following subject has occupied my attention for some months, I may say for nearly two years; during which I have been, as my leisure and opportunities enabled me, gaining all the information I could collect relative to it. Very extensive professional engagements have hitherto prevented my being able to collect all the facts I had a clue to, or arrange and methodize all the information I have obtained. I did not, therefore, propose to offer any thing to the public till I could have done it with more perfect confidence; but some recent melancholy instances of hydrophobia, and the alarm awakened by Dr. Moseley's statement of the case that fell under his notice, has determined me to withhold no longer the leading facts of what, perhaps, may eventually prove an important discovery; promising you a more detailed statement when I have collected and arranged further information connected with the subject. In my profession, as a veterinary surgeon, very numerous cases of canine madness fall under my notice; and I, of course, become witness to scenes of a distressing nature, from the alarm and danger occasioned by the bite of these animals; a danger that former experience and some late dreadful cases fully prove is but too well founded.

It is now nearly two years since I was informed, by a gentleman of great respectability, that very near Watford there lived a family who had dispensed, for more than a century, a sort of cake that was considered a certain remedy for the bite of a mad dog, and which he had had, during a residence on the spot of thirty-five years, repeated instances of witnessing the efficacy of. The facts this gentleman, who is of undoubted veracity, adduced, many of

which fell under his immediate notice, were so numerous and satisfactory, that I was inclined to pay considerable attention to the information. Having been regularly educated as a medical practitioner, I was at first, as is usual, too ready to give little credit to a recipe dispensed by the hands of an ignorant peasant; but reflection and experience corrected this bigotry, and taught me that the greatest discoveries have been the effect of chance; and that this would not be the first instance, where the most extensive benefits had remained in obscurity for the want of some fortuitous circumstance to bring them to light. The gentleman who made me first acquainted with this remedy formerly resided on the spot, where, from witnessing its frequent exhibition, and always with uniform success, he became much interested in it, and hence sought every opportunity of making himself acquainted with all the circumstances connected with it. His account to me was, that the family name of these people is Webb; that they lived a small distance from Watford, in Herts; and that it had been administered by them, and their ancestors, nearly 150 years; that throughout the neighbourhood no fear was entertained of canine madness, either to the human subject or brutes, from the general faith that was placed in what is called *Webb's Medicine*; and that, during all the period of his residence on the spot, he never heard of any instance of its failure. This general opinion, however, he lays less stress upon, than he does on numerous cases that have fallen under his own notice, many of which I have heard him relate; two of them appear so satisfactory that I will particularize them.

A dog, evidently mad, was seen to bite two pigs belonging to a cottager; both were bitten on the nose severely. He then made his way into this gentleman's yard, where he seized a servant-maid, while stooping, by the lip, which he bit entirely through, but was prevented doing further mischief by the gamekeeper, who pinned him to the ground with a stable-fork. The cottager's pigs were immediately bought by this gentleman, for the express purpose of experiment. Nothing of the usual kind was applied to either the girl or the pigs; but the former immediately put herself under Webb's care, took the remedy, and never felt further ill effect from the accident. The pigs were confined in separate sties; to one was adminis-

tered the remedy, to the other nothing was given. In about ten days this latter drooped, became furious, and died with all the symptoms of rabies; the other was not affected, but was afterwards fatted and sent to market.

The second instance is that of six soldiers belonging to the 1st regiment of Fencibles, at that time commanded by Col. Villiers, which men were all severely bitten by a dog unquestionably mad. One of the field-officers in the regiment was a relation of the gentleman above alluded to, and was himself acquainted with the supposed efficacy of this remedy, and had considerable dependence on it. By his desire, the medicine was sent for, and regularly administered to the whole of them: the result of which was, that no ill effect followed. It will be naturally asked, Were no other means resorted to, in a regiment where there would be of course good medical advice? My informant thinks there was no other preventive made use of, in the majority of them at least, if not in the whole.

It will appear self-evident, that, in so very important a matter as the danger of hydrophobia, no experiment ought to be made on the human subject, nor any means left untried that can add to the certainty of prevention; consequently, whatever might be my opinion of this remedy, I have never omitted, in any case that fell under my notice, to recommend the use of the cautery or excision; and, with regard to animals, most of those I have been consulted about, have, from their real or supposed value, been similarly situated; and more actual experiments, tending to bring to the test the efficacy or fallacy of the medicine, I have not had opportunity of making. These causes have consequently lessened the number of proofs, and the body of conclusive evidence I can myself offer in its favour: nevertheless, the following facts will be found not a little to strengthen the supposition, that it possesses the properties attributed to it.

Being called to inspect a dog, bitten by another that was evidently mad, I learned that two persons had been also bitten by the same dog. Having frequently seen that too little alarm exists after so dreadful an accident, or that improper and inefficient means are frequently resorted to, from the faith in the Ormskirk medicine, or sea-bathing; from motives of humanity I sought out these people. One was a female, the dog's mistress, whose arm was only slightly grazed; the other was an ostler at a public-house

in Paddington, whose leg was severely bitten. The woman promised me she would go to the Mary-le-bone Infirmary the next day; but I in vain attempted to stimulate the man to have the part removed, though I offered to do it, and to attend to it afterwards, gratis: his reply was, that he had sent for Will Webb's medicine, and he was certain that he needed nothing else, and would trust to that alone. This was early in the last summer, and he remains perfectly well to this time.—A person who keeps a menagerie in the suburbs of London had one of his dogs become mad, which dog, before he was secured, bit five other dogs belonging to the same person. Webb's remedy was immediately sent for, for all of them: four out of the five were readily made to swallow it, but no means were sufficient to make the fifth swallow more than a small portion, and what was got down was soon rejected by the stomach. The event was, that the four who retained the medicine remained unaffected, and were at length sold, a considerable time after, as sporting dogs; while the fifth dog went mad, and died a short time afterwards.

I could relate many other circumstances that are at least presumptive proofs of its efficacy; and I could enumerate several persons, as well as animals, who have lately taken it, and many without any other precautions, all of whom are at present well; but as it might be thought a sufficient time had not elapsed to pronounce them out of danger, I shall not adduce these at this time.

It is now between five and six weeks since I unfortunately met with a similar accident, having been bitten by a dog in the last stage of madness, and which died in an hour afterwards. Independent, therefore, of what I before felt for others, I must now be supposed to have a peculiar sympathy for the unfortunate in this particular; and very forcibly to wish that some means might be brought to light whereby the danger of this dreadful malady could be avoided. My opinion of this medicine was such, that though I did not neglect immediately to apply to excision and the potential cautery, yet I the next morning went to the old peasant for his remedy, which I regularly took four subsequent mornings. I mention this, not as any proof of its efficacy, but simply as it will prove, more than a volume of words, my placing no small dependence upon its virtues; as it can hardly be supposed

that I would go this distance, or submit to taking such a nauseating dose for four mornings, without a considerable opinion of it.

The dispenser gives it in the form of either cake or liquid, and generally directs that the quantity given be taken in three doses; one each morning fasting. The effect it produces is nausea, without in general vomiting; giddiness, tremors, and cold sweats: these effects last two, three, or four hours, and then go off and leave the person free from ailment.

If what I have here detailed should produce a wish in any person to prosecute the investigation further, they are now furnished with the means, and shall have all the assistance in my power; as an anxious desire to benefit my fellow-creatures is my only motive on the present occasion. Subjoined is an exact copy of the recipe itself, as sent to me, and attested upon oath before a magistrate, which it may be supposed cost me no small trouble to obtain; but neither that nor any further exertion will be thought ill-spent by me, should it prove the means of saving one fellow-creature from a horrible and untimely end.

DELABERE P. BLAINE,
Veterinary Surgeon.

Well's-street, Oxford-street, London,
Nov. 22nd, 1807.

“ *A Copy of the original Recipe of John Webb, for the Bite of a Mad Dog, given by a Lady to his Grand-mother 150 Years since, or upwards; given at Tring, Herts; taken from the Original by James Webb, Son of the above John Webb, deceased;*

“ Take of the leaf and tender bud of rue half a large tea-cupful, when cut quite small, the cup to hold about a quarter of a pint, beer measure; take the same quantity of large box, or tree-box, also cut this small; add nine leaves of red sage, cut small; let them be without blemish. Take half a pint of new wheat-meal from the mill, or good fine flour, and about one table-spoonful of yeast; mix it together as dough; let it lay about half an hour, then bake or broil it; take one third of it in new milk each morning. This quantity for a man or woman; the same quantity for a sheep, hog, or dog: but for a cow or horse, take one large tea-cupful of rue, cut small, and the same of

box, but only nine leaves of sage; give this in milk, or some other liquid. Half this quantity will do of the rue and box for a colt or calf; but nine leaves of the sage. My father has cured some men when mad: then he took one tea-cupful of rue and one of box, and nine leaves of sage; boil it well in a pint of milk, and give it as quick as possible. Half this quantity of rue and box for a small child; but in all cases, no more or less than nine leaves of sage.—After about thirty-eight years experience with my father, and the use of the receipt,—this I pledge on word and oath.” (Signed)

“Feb. 25, 1807.

“JAMES WEBB.”

TWENTIETH EXTRACT FROM THE MINUTES OF THE
ORIGINAL VACCINE POCK INSTITUTION,

Broad Street, Golden Square.

SEPTEMBER 8, 1807. “Mrs. Ann Geary attended the Institution this day, to state that she had had two children inoculated for the cow-pock about six years ago: she then resided at No. 31, Portman-mews. They were considered by Dr. Thornton, at the time, to go through the disorder regularly.

“One of the children, Mary Ann, attended with her mother this day. She has one scar from the vaccine inoculation on the left arm. The other child, George, did not attend; but the mother says he has a similar scar upon his arm. She states further, that both the children took the small-pox about eighteen months after the cow-pock; and that the eruption was declared to be small-pox by Dr. Thornton. The girl had only about 50 pustules; but the boy had them numerously, and was dangerously ill.

“Ordered, that Dr. Thornton be written to on the subject.”

OCT. 6, 1807. “Mr. Gemmell, surgeon-apothecary, Princes-street, Drury-lane, attended to give information respecting some cases of failure of cow-pock.

First. “In the family of Mr. Thorn, an upholsterer, Bear-yard, Lincoln’s Inn Fields: one of his children was inoculated at Pancras Hospital about three years ago; about nine weeks afterwards, Mr. Gemmell attended the

same child in the small-pox, which was very distinct and full, and unquestionably small-pox.

“ *Second* case was in the family of one Weaver, 35, Stanhope-street, Clare-market. (See the particulars of this case below.)

“ The *Third* case is now in the scabbing state of small-pox, at No. 14, Banner’s-court, Drury-lane. This child had been vaccinated at the Small-pox Hospital.”

Oct. 13. “ Ann Weaver attended this day with her son, William Weaver, nearly six years of age, whose case is mentioned above by Mr. Gemmell, (No. 2.) She says he was inoculated for cow-pox by Mr. Wachsel, at the Small-pox Hospital, about three years and a half ago: the scars are visible, but faint. The case was considered by Mr. Wachsel at the time to be complete, and several other patients were inoculated from it. He was re-inoculated, however, for cow-pox about four or five months after, because the mother was dissatisfied, conceiving there ought to have been eruptions. This second inoculation produced a fore arm for several weeks.

“ Three months ago this boy was taken ill of fever, followed by eruptions, which were seen and declared to be small-pox, of the confluent kind, by Mr. Wachsel, Mr. Mainwaring, Mr. Sutton, Mr. Lawrence, Dr. Moseley, and others. This boy had communicated a short time before his illness with persons in the neighbourhood labouring under small-pox.

“ Mary, the sister of the above, who had been vaccinated by Mr. Wachsel, fell ill five weeks ago, and had about twelve eruptions, the scabs of some of which remain at this time. Other children in the adjoining houses have since fallen ill of small-pox.”

Oct. 26. “ A note was received from Mr. Gemmell, mentioning the case of a child of Moore, a taylor, residing at No. 17, Great Wild-street, Lincoln’s Inn Fields, then lying dangerously ill of small-pox after vaccination. In consequence of this information, a Governor of the Institution made enquiry the following day into the circumstances of the case. He reported, that he found the child lying dead of confluent small-pox, which had proved fatal on the twelfth day. The father said the child had been

vaccinated two years before at Dundee, by Dr. Crichton of that place, who had declared the progress of the vaccine affection to be perfectly regular, and had in consequence taken matter from it to inoculate another child of the name of Scott. A distinct scar remained on the arm, and was visible at the time of the child's death. It was seen in the small-pox by Dr. Haworth, Mr. Gemmell, and several other gentlemen."

Oct. 27. "Elizabeth Jones, No. 14, Granby-buildings, Drury-lane, attended this day with her two children; Mary Ann, aged three years and a half, and Michael, aged six and a half. They were both vaccinated at the Small-pox Hospital three years and three months ago, and were considered to go through the disorder regularly. Superficial scars have been left on the girl's arm, and very distinct ones upon that of the boy.

"About seven weeks ago, the girl was seized with the small-pox, and was seen while under it by Dr. Stone, Mr. Caton, Mr. Gemmell, Mr. Birch, and many others. The disease was very severe and dangerous.

"The boy was inoculated from the girl, and the inoculated part advanced regularly, followed by a fever and eruption, preceded by convulsions. Different opinions were entertained by the gentlemen who saw it, whether the eruptions were small-pox or not."

Nov. 6. "Dr. Pearson reported, that he had visited a child of the name of Beasley, between three and four years of age, residing at No. 49, Upper Rathbone-place, who was just recovering from small-pox, so severe as to have been in considerable danger. The eruption was universal, but distinct, and the pustules large and perfectly characterised. The eruption was now in the tenth day, and had not yet completely matured on the extremities. This child was vaccinated two years and ten months ago, viz. in January 1805, by Mr. Griffiths, of St. George's Hospital, and went through the disease to his satisfaction. Distinct scars remain on the inoculated parts. It is worthy of remark, that the cicatrices were quite free from pustules, although almost every other part of the skin was covered with them. The same thing has been observed in other cases.

“ A Governor of the Institution reported, that he had a few days before seen a case of eruption in a child, at No. 6, Little Guilford-street, which, from the appearances and circumstances, he judged to be small-pox, though it was now on the decline, some of the scabs only remaining. The eruptions had been numerous, amounting to several hundreds, but had all scabbed by the seventh and eighth day. They were preceded for two days by violent fever, with delirium. The child had slept and associated constantly, a fortnight before it was taken ill, with a child in the same house while under inoculation, and who had a numerous crop of pustules. It had been vaccinated by a private practitioner between three and four years before : distinct scars are now visible on the arms.

“ Dr. Clutterbuck this day reported, that he had seen, two days ago, the child of Mr. Stiles, No. 7, Lamb's Buildings, Bunhill-row, then lying dead of small-pox. The disease was of the most malignant character, the pustules in general remaining flat and empty, interspersed during life with numerous purple spots. They were confluent only about the face. Many vesicles containing bloody serum were scattered over the skin.

“ This child had been vaccinated at the Golden-lane Jennerian Station, by Mr. Lewis Leese, surgeon, and was registered as having gone regularly through the disease. The scar on the inoculated part was perfect.”

Tuesday, Nov. 24. “ Robert Purdy, of 45, Upper Rathbone-place, attended the Institution this day with his daughter, Sarah Purdy, aged four years and two months. This child has now an eruption of pustules amounting to several hundred, pretty generally diffused over the whole body, and which first made their appearance five or six days ago, after three or four days illness, with fever. The pustules on the face are now nearly in a state of maturation : those on the extremities are less forward. The gentlemen present, five in number, are unanimously of opinion that it is small-pox.

“ The father says, that the child was vaccinated by Mr. Addington, of Spital Square, four years ago next January, at the Jennerian Station in that neighbourhood.

and went through the affection regularly. There is a distinct scar on each arm from vaccination.

“A younger child in the same family has just gone through the small-pox, having been inoculated three weeks ago at the Small-pox Hospital. The small-pox has been also prevalent in the neighbourhood for several weeks past.”

TO THE EDITOR OF THE MED. AND CHIR. REV.

THE merits of the new Inoculation having undergone the investigation of so many learned bodies, and the promulgator of the practice having been so lately and liberally rewarded by his country, one might have expected that the question would by this time have been set at rest—that the advantages and demerits of the practice would have been justly appretiated—and that all past and future cases of small-pox after cow-pox might be explained upon some more rational ground than that of denying (without proof) the validity of one and the existence of another. Such expectations, however, appear to be without foundation, the state of the question being still as unsettled as ever.

Much has been said about the *temporary* effects of the cow-pox. The advocates of vaccination, it seems, consider such an idea as unphilosophical; but upon what principle I know not; for no law in the animal œconomy seems more certain, than its varying susceptibility. It seems to me, indeed, superfluous to argue the question.

One case has recently occurred to me that I shall presently relate (and I have seen many more), which cannot be explained without admitting such a temporary preventative power of the cow-pox.

I am daily more convinced of what I ever suspected, that too much has been taken for granted in these curious and interesting experiments; that what ought to have been taken up with the greatest caution, and proved by experiment, was adopted on hearsay; nay, the evidence of experience (that of the farmer) has been overlooked, namely, that some of those which had had the cow-pox casually took the small-pox afterwards casually, or by inoculation, as stated in the earliest publications on the subject. This weighty fact seems to have been totally forgotten by the warm admirers of vaccination.

On the 17th of Oct. last, Mrs. Pearce, No. 23, of New-

street, Soho, brought to me her son James-Henry, *æt.* seven years and a few months. He had a great number of distinct pustules upon every part of the body, containing lymph; his pulse was quick, and tongue covered with a brown fur in the middle, and white around. The pustules appeared on the 13th, after the boy had been feverish and very unwell for several days. I took the disease to be small-pox, though somewhat mild for casual infection: the small-pox was much in the neighbourhood. However, to put the nature of the disease beyond doubt, I took matter from a large pustule on the hand, which had every characteristic mark of small-pox, with which I inoculated the two children whose cases I shall briefly relate below. This boy was vaccinated at the Small-pox Hospital when an infant, and has two very obvious scars on the arm. The mother, who is a very intelligent woman, took great pains to have the disease investigated, and received the following certificate from the Small-pox Hospital: "James Pearce, aged two months and fourteen days, was vaccinated October 20th, 1800, and passed regularly through the disease, at the Inoculation Hospital, Pancras."—(Signed) "J. C. WACHSEL."

The patient was seen by Drs. Marshall, Clutterbuck, Pearson, and Adams, who all concurred in its being small-pox. He has repeatedly (since vaccination) been exposed to the small-pox; has even slept with a child in that disease.

Oct. 18th. Elizabeth Ramsey, three weeks old, living in the same house, was inoculated with matter taken from James Pearce. Until the 21st, the part of the arm punctured could scarcely be distinguished; after which time, it regularly inflamed. The child was feverish and unwell on the 25th: on the 27th, small pustules appeared on different parts of the body, a few of which went through the regular stages, of containing lymph, matter, and scabbing.

Oct. 19th. William Findon, of No. 217, High Holborn, ten months old, was inoculated with matter taken from James Pearce, in two places. On the 28th the inoculated parts were of an ovalish shape, with a dimple in the middle, and elevated above the level of the skin; they contained lymph, giving rather the appearance of cow-pox than small-pox; the child was feverish and unwell for three days, and yesterday a number of pustules appeared on different parts of the body, about a dozen of which went through the regular stages.

Nov. 7th. Scabs on the arm, smooth, thick, and of a darkish brown colour, standing prominent, and altogether like the vaccine scab; the eruptions have horny heads.

Now in the case of James Pearce above described, as perhaps in every one that has been vaccinated, the system was rendered unsusceptible to the small-pox for a time, but it afterwards acquired it. This circumstance alone ought to make medical men greatly on their guard, as it gives strong reason to suspect that many of those who have undergone vaccination, may, after a time, become again susceptible to small-pox; and that resisting the disease once, is no proof that it will always be so.

What further warrants this speculation is, that those who have been vaccinated, and are afterwards inoculated with small-pox matter, seem in many cases to exhibit marks of gradually returning susceptibility. I have witnessed every gradation, from complete unsusceptibility to the full-formed disease; and, generally speaking, the gradation I have found to bear some proportion to the length of time after vaccination. I have observed, for example, cases where no inflammation at all was excited by the insertion of variolous matter; where the inflammation lasted for a few days only, in the form of an angry itching pimple; where a perfect variolous pustule took place in the inoculated part, without any constitutional disease; and, lastly, where there was even constitutional affection, followed by a few imperfect secondary pustules. Is not the inference to be drawn from these cases evident? namely, that the aptitude for the small-pox was gradually returning. Whether it is time alone, or whether time merely gives an opportunity for other causes to operate, I am not inclined at present to argue.

I cannot but express great pleasure (whatever the fate of the new practice may be), that many of the vaccinators themselves begin to examine cases of failure more coolly than at first, and now admit facts which they once would have condemned without investigation. I look forwards in the expectation that, before long, many truths heretofore questioned will not only be seen, but admitted, and have their proper weight allowed them; and that the practice will either stand or fall by its own intrinsic merits.

Chancery-lane, Nov. 20, 1807.

S. SAWREY.

Singular Cure for the Gout.

M. Cadet-Devaux, in his *Journal d'Economie rurale*, mentions the following as a fact :

“ A lady, above eighty years of age, whom I have the honour of knowing intimately, was attacked with rheumatic-gout thirty years ago. It seized the whole body; her pains were excessive; and, during six weeks, the efforts of art to relieve her were ineffectual; when a friend of the lady mentioned the cure of a similar disorder, by drinking enormous quantities of hot water, to the amount of 48 glasses in the space of twelve hours. The severity of the pains the lady suffered determined her to make the experiment, and she set about taking every quarter of an hour a cup containing seven or eight ounces of hot water (not merely warm, as this occasions vomiting, an effect that is not required). Thirty glasses were found sufficient to remove the pains, as it were by enchantment; she then stopped, and fell into a profound sleep, which she had not enjoyed for a long time before. Nothing of the disorder remained, except a sense of weight in one arm; but dreading a relapse, she determined, after a fortnight, to repeat the operation, and carried it on this occasion to forty glasses, when hunger and a desire to sleep put a stop to the experiment. From this time the cure was complete.

“ About fifteen years afterwards, the same lady, then sixty-five years old, had a new attack of her former disease, with an entire loss of the use of her limbs: she had recourse to her former remedy of hot water, and with the same success as before. From that time she has had no return of the disease, and at present enjoys a good state of health.”

Esprit des Journaux, March 1805.

✂ The Title-page, Contents, and Index, will be given with our next.

INDEX.

A

- ACETATE** of lead, utility of in
hooping cough xxxvii
——, utility of in
hysteria, &c. lxiv
—— of ammonia, rems. on 281
Acid of urine, experiments on....x, civ
—— milk, experiments oncviii
Adams, Dr. J. popular view of vac-
cine inoculation285, 336
Age, old, remarks on.....86
Anatome castoris.....35
Andrews, Dr. M. W. treatise on
strictures.....210
Animal heat, remarks on.....327
—— food, mode of preserving....lii
Arsenic, utility of in rheumatism.....35

B

- Balfour*, Dr. F. on sol-lunar in-
fluencexc
Bardsley, Dr. S. A. medical reports 6
Bark of trees, on the formation of 140
Barton, Prof. remarks on the opof-
fum.....50
Beaver, anatomy of.....35
Bile, not in the blood in jaundice xxix
Bilious diseases, remarks on.....312
Birch, Mr. answer to queries.....117
Bismuth, medical properties of.....8
Blaine, Mr. D. P. remarks on ra-
bies.....cxx
Bloodletting, effects of in fever ...105,
170
Blue ointment, remarks onlxxxii
Blumenbach, treatise on compara-
tive anatomy55
Boerhaave, anecdotes of.....lxv
Bonn, anatome castoris.....35
Brain, the seat of fever.....44
——, injured, causes fever.....317
Bulimia, singular instance of.....xi
Burns, remarks on.....316
Butterby, analysis of waters of.....61

C

- Cæsarean section, second time in
the same subjectxl
Calculus, essay on.....330
Camphor, aqueous solution of.....li
Canine madness, treatise on64
—— remarks on.....11

VOL. XV.

- Carbonic acid, on the production of
by plants and animals.....320
Case for counsel on medical reform cxiv
Castor, chemical account of35
Cataract, interesting case of.....65
Charter of the college of physicians
and surgeons of New York.....239
Chenopodium, remarks on.....xii
Chicken-pox, remarks onxx
Child, an extraordinary one.....lxvii
Chortet, sur les crises, &c.....38
Cinchona, chemical examination of..xii
Clanny, Dr. W. R. on the But-
terby waters.....61
Clutterbuck, Dr. H. inquiry into
the seat and nature of fever,
part I39, 102, 142
Code of health and longevity ...82, 121
Cold, remarks on the agency of.....142
College of physicians, report of on
cow-pox.....xvii
——, correspond-
ence withi, 341
——, remarks on
the report of.....336
Contagion, destruction of by oxy-
genated muriatic acid.....lxviii
Cooper, Mr. A. treatise on hernia.....1
——, Mr. S. first lines of sur-
gery.....161
Coronary artery of stomach, aneu-
rism oflxvii
Correspondence with reviewers.....lv
Cow-pox, treatise on.....25
—— and small-pox, identical..292
Crural hernia, remarks on.....1
Curtis, Mr. C. account of India
diseases.....305
Cystic hernia, remarks on5

D

- Davis*, Dr. D. translation of Pinel's
treatise on insanity.....185, 257
Davy, Mr. H. on the chemical
agency of electricity131
Death by small-pox after cow-pox,
cases ofxvi
Decandolle sur les propriétés me-
dicales des plantes113
Diagnosis of fever, remarks on40
Digitalis, treatise on.....200
Distomus intersextus, account of.....xlx

S

Duncan, Dr. A. on medical jurisprudence.....174

E

Earle, sir J. essay on fractures of the lower limbs.....156
Eczema mercuriale, account of.....59
Edinburgh college on medical reformii
 ———— on vaccination...xxv
 ———— university on medical reform.....xlii
Electric eel, account of.....ix
Electricity, on the chemical agency of.....131
 ————, remarks on.....235
Ellis, Mr. inquiry on germination, &c.....218, 320
Ewell, Dr. T. on the laws or properties of matter.....233
Eye, *Soemmering's* plates of.....275

F

Female urinal, account of.....xl
Fever, inquiry into the seat and nature of, part I.....39, 102, 142
 ———, essay on.....15
 ——— caused by injuries of the brain.....317
 ———, diagnosis of.....40
 ———, effects of sol-lunar influence on.....xc
Fox glove, treatise on.....200
Fractures of the lower limbs, treatise on156
Frank, Dr. anecdotes of.....xcviii
Frydenberg, M. memoir on the feetang.....xxxviii

G

Gall, Dr. anecdotes of.....xxxix
Galvanism, utility of in palsy7
Geoghegan, Mr. on medical reformxxxvi
 ———— appendix on lues venerea183
Germany, state of medical practice in.....lvii, lxxiii, xcvi
Germination, inquiry on.....219, 320
Grant, Dr. D. essay on yellow fever163
 ————, reply to *Dancer*....164
Greenwich pensioners, remarks on...126
Guaiacum, utility of in amenorrhœa.....ix
Gymnotus electricus, account of.....ix

H

Hamilton, Dr. W. treatise on fox glove.....200
Harrison, Dr. E. letters on medical reformxli, cxi
Hardman, Mr. on arsenic in rheumatism36
Harvey, anecdotes of.....26
Health, rules for preserving.....92
Heat, animal, remarks on.....327
 ———, remarks on.....234
Henry, Dr. W. inaugural essay330
Hepatitis, remarks on.....311
Hernia, treatise on.....1
Horne, Mr. E. cases of cataract74
Hooping cough, use of lead in....xxxvii
Hofack, Dr. D. catalogue of plants...97
Hydatids in tibia, case of.....xlvi
Hydrophobia, preventive for.....cxxiv
 ————, remarks on.....11
 ————, treatise on.....64
Hydrothorax, remarks on.....208

I and J

Jaundice, state of the blood inxxix
Icones oculi humani...275
Jenkinson, Mr. on arsenic in rheumatism35
Jenner, second reward of.....xl
Imperforate vagina, case of.....1
India diseases, account of.....305
Inoculation, remarks on285
Inquiry into the seat and nature of fever, part I.....39, 102, 142
Insanity, treatise on185, 257
Jurisprudence, medical, remarks on.....174

K

Knight, Mr. T. A. on the formation of the bark of trees.....140

L

Lawrence, Mr. W. translation of *Blumenbach's* system of comparative anatomy.....55
Lead, utility of in convulsion disorders.....lxiv
Lectures, account of.....iii, lxxii
Lipscomb, Mr. G. essay on hydrophobia.....64
Liver diseases, remarks on.....311
 ———, new opinions on95
Longevity, remarks on.....85, 129
Lues venerea, treatise on.....56
Lunar influence, remarks on.....xc

M

- Magistery of bismuth, remarks on.....8
 Mania, treatises on.....185, 301
 Medical reform, proceedings on.....i,
 xxxiv, xli, lxxxvii, cxi
 — jurisprudence, remarks on..174
 — promotions.....liii, xcvi
 Menstruation, extraordinary defect of..x
 Mercury, action of in fever.....145
 —, state of in ointments.....lxxxix
 Mesenteric hernia, remarks on6
 Midwifery, lamentable case of.....xcii
 Milk, on the acid of.....cvi
 Molleson, Dr. on quackery123
 Moseley, Dr. B. Oliver for a Row-
 land25
 Musical doctor, account ofxlvi

N

- Negro, peculiarity of the eye in.....278
 Nervous temperament, view of.....302
 New York, medical charter of239

O

- Oesophagus, cases of stricture of.....214
 Old age, remarks on.....129
 Oliver for a Rowland25
 Olive oil, use of in yellow fever .lxxxix
 Opium, remarks on50

P

- Pancreas, remarks on95
 Pearl small-pox, account of.....291
 Pearson, Mr. J. treatise on lues ve-
 nerea56
 Pemberton's oration, critique on.....26
 Percival's works and life.....250
 Petersburg hospital, account of .xxxiii
 Philosophical transactions of the
 royal society of London for 1807,
 part I65, 131
 Phrenic hernia, account of.....5
 Pinel, M. treatise on insanity 185, 257
 Plants, medicinal properties of.....113
 Planetary influence, remarks on.....xc
 Plica, utility of mercury in.....lxxxix
 Popular view of vaccine inocula-
 tion.....285, 336
 Pseudo-syphilis, remarks on57
 Pudendal hernia, account of3
 Purging, effects of in fever.....108

Q

- Quackery, remarks on123

R

- Rabies, remarks on11, cxiv

- Reece, Mr. R. on whooping cough xxxvii
 Report of the royal college of phy-
 sicians of London on cow-pox.....xvii
 Respiration, remarks on.....222, 320
 Rheumatism, utility of arsenic in35
 Rogers, Dr. letter fromxxx
 Rush, Dr. remarks on viscera95

S

- Scurvy, remarks on.....xii, 306
 Sensorial stimuli, remarks on.....111
 Shaw, Dr. on the use of the tobacco
 bougie in strictures in the urethra.xci
 Sinclair, Sir J. code of health and
 longevity.....82, 121
 Small-pox, varieties of after cow-
 pox, cases of.....xv, cxxxv
 — inoculation, remarks on 285
 Soemmering, icones oculi humani ...275
 Sol-lunar influence, remarks on.....xc
 Spasmodic cholera, account of.....307
 Spiritus mindereri, remarks on281
 Spleen, remarks on.....95
 Sponges, method of whitening ...lxxxvi
 Stomach of the whale, remarks on ...74
 Stone, case of discharged by ab-
 sciss.....x
 —, treatise on.....330
 Strictures, remarks on.....210
 Superfoetation, case of.....lxvi
 Surgeons, report on vaccination..i, xxv,
 xxviii
 Sweat, analysis oflxxxii
 Sweating, effects of in fever109

T

- Tannin, remarks on.....lxxi
 Teeth, renewal of in old age.....88
 Tetanus, remarks on315
 Thenard, M. on the acid of urine, &c. civ
 Thyroid gland, on the use of95
 Tobacco bougie, use of in strictures
 in the urethra.....xci
 Trotter, Dr. T. on nervous tem-
 perament302

V and U

- Vaccination, reports on.....xvii
 Vaccine fluid, remarks on.....lxxi
 — inoculation, popular view
 of285, 336
 — and variola, identical.....292
 — institution, minutes of, ex-
 tracts from thexiv, cxxv
 — inoculation, irregularity
 of.....vi
 —, failures of xv, cxxv

- Vaginal hernia, remarks on4
 Vagina, case of imperforate1
 Variolous inoculation, remarks on..lxix
Vauquelin, M. on the different
 species of cinchona.....xii
 Vegetable juices and fruits, me-
 thod of preserving.....viii
 Vegetation, remarks on..220, 237, 320
 Venereal disease, treatise on.....56
 Ventral hernia, remarks on.....2
 Umbilical hernia, remarks on.....1
 University of Edinburgh, letter on
 medical reform.....xlii
Vogel, M. on the state in which
 mercury exists, when combined
 with unctuous matters.....lxxxi
 Vomiting, utility of in fever108
 Uric acid, essay on.....330
 Urine, on the acid ofx, civ

W

- Whale, on the stomach of.....74
Willey, Dr. A. C. on the efficacy
 of the acetate of lead in hysteria
 and chorea.....lxiv
Wilson, Dr. A. P. essay on fever.....15
Wolfram, M. speculation respect-
 ing plica polonica.....lxxxix

Y

- Yellow fever, treatise on.....162

END OF VOL. XV.

Miscellaneous.

JANUARY 1808.

MEDICAL REFORM.

[Continued from page cxix of our last volume.]

Queries addressed to Counsel, respecting the Jurisdiction of the Royal College of Physicians of London; with the Answers thereto.

FIRST. “ Have the London College of Physicians any real or effective power (under the Act of 14th and 15th Henry VIII) of controuling *generally* the practice of physick in England at a greater distance than seven miles from London ?

SECOND. “ If they have such power, does it extend to doctors of physick (not graduates of Oxford or Cambridge), or merely to persons practising without a diploma ?”

Ans. I am of opinion that the London College of Physicians *have not any power* whatever, either under their charter confirmed by the statute 14th and 15th Hen. VIII, c. 5, or by the third section of that Act, to controul the practice of physick in England at a greater distance than seven miles from London. There are two clauses in the charter relative to this subject of their power to controul the practice of physick. One is to prohibit any person, *whether he be fit or not*, to practise physick in London, or within seven miles round London, without the licence of the College. If he do so *for a month*, he is liable to a penalty

of 5*l* a month; one half to the King, and the other to the College. And this remedy by action is the only way by which the College can prevent the practice of physic in London, or within seven miles round, without their licence. The other clause in the charter gives the four censors the power of supervision and correction over physicians, and of punishing them. "*pro delictis suis in non bene exequendo, faciendo & utendo*:" but this power of supervision and punishing is confined to London and seven miles round. Under this charter the censors cannot either fine or imprison any person for practising in London *without a licence* from the College; they can only fine or imprison *pro malâ praxi*. Now when the statute 14th and 15th Hen. VIII, c. 5, f. 3, says, that no person shall practise physic through England until such time as he be examined in London by the president and three of the elects, and to have from the said president and elects letters testimonial of their approving and examination, yet it gives no power to the College of Physicians, or to any body else, to oblige a person to be examined, and have a licence before he is allowed to practise as a physician. The statute does not subject the party to a penalty, either expressly, or by reference to the charter, if he does practise without the licence required by the statute; as the charter does when it prohibits persons from practising in London without a licence; or as the statute of 3d Hen. VIII, c. 11, f. 2, does when a person practises physic out of London and the precinct of seven miles without the allowance required by that Act. Nor does the third section of the 14th and 15th of Hen. VIII give to the College any power to correct and punish physicians who practise at a greater distance than seven miles from London. Therefore, inasmuch as the College could not have prevented persons from practising physic in London,

unless there had been a penalty added for so doing, it being clear that they cannot punish a person who practises in London without a licence by fine or imprisonment; and inasmuch as without the clause in the charter giving the censors a power to punish persons practising physic in London *pro malâ praxi*, they could not have had any controul over them, it follows that, though the statute contains a prohibitory clause in it, yet as it has not inflicted any penalty upon the persons prohibited for doing contrary to the Act, or given any power of punishment to the College to correct their mal-practices in the country, the Act is a dead letter, and wholly inoperative.'

THIRD. "Are graduates in physic of the Scotch Universities entitled by the Act of Union to the like privileges in England as those of Oxford and Cambridge are entitled to under the Acts before mentioned?"

Ans. I am clearly of opinion that they are not. As for instance: The 21st Hen. VIII, c. 13, f. 23, provides that all doctors and bachelors of divinity, doctors of law, and bachelors of law, who shall be admitted to any of the said degrees in any of the Universities of this realm, and not by grace only, may purchase licence to hold two livings. It has been held that a person who has been created to any of these degrees in the Scotch Universities, though after a regular education, is not intitled to purchase a dispensation to hold two livings. So it is with respect to an advocate in Doctors Commons; he must be a doctor of one of the English Universities. Lord Mansfield comments on the 4th article of the Union in *Jones v. Smart*, 1 Term Rep. 48. "It is true," says he, "that by the 4th article of that Act, the Scotch have the same general privileges as the English; but then they must have the same qualifications, otherwise they come not

within the same description ; for the general article which declares there shall be a communication of all privileges, can only mean such as are of a general nature." A doctor of the English Universities may become a member of the College of Physicians ; may plead in Doctor's Commons ; and has various other privileges, from all which a Scotch doctor, as such, is excluded. The words in the third section of the 14th and 15th Hen. VIII are very strong, " except he be a graduate of *Oxford or Cambridge*, which has accomplished all things for his form, without any grace."

FOURTH. " May doctors of phyfic of the Scotch Universities, who, according to the Acts of Henry VIII, are groundedly learned, &c. claim to be examined for the fellowship of the College of Physicians in England, although they refuse to be made licentiates ? And are they by the Act of Union placed upon an equal footing in point of eligibility for the fellowship with the graduates of Oxford and Cambridge ?"

Ans. It is too fully settled to be now doubted that doctors of phyfic of the Scotch Universities, who are groundedly learned (to use the language of the statute of Hen. VIII) have no claim to be examined for the fellowship of the College of Physicians in England, although they may refuse to be made licentiates. This point is in effect decided in Dr. Stanger's case. For though he was a licentiate, and his claim to be admitted a member was grounded upon that circumstance, being a practiser of phyfic in London, and therefore within the clause in the charter "*et omnes homines ejusdem facultatis de & in civitate predicta;*" yet the court did in substance decide that the bye laws of the College, by which it was enacted that no person should be admitted who was not a doctor of phyfic of Oxford or Cambridge, or Dublin incorporat-

ed into Oxford or Cambridge, or unless licentiates in the manner there pointed out, was a good bye law; and by that decision it follows that a doctor of physic of the Scotch Universities has, as such, no claim to be examined for the fellowship of the College. I have already observed, that I think, and indeed am very clearly of opinion, that the Scotch doctors are not by the Act of Union placed upon an equal footing in point of eligibility for the fellowship with the graduates of Oxford and Cambridge.’

FIFTH. “ On a review of the whole subject, be pleased to mention, generally, any ideas which may suggest themselves to you, as calculated to promote the ultimate objects of those who are desirous of procuring the reform suggested.”

‘ *Ans.* The result of the whole is this : The great object cannot be attained. Any person with a degree, or without one ; or with a licence from the College, or without ; may practise physic in England at a greater distance than seven miles from London, whether he be fit or not, without any person to controul him ; otherwise than that, by the common law of England, if a person is guilty of *mala praxis*, whether it be for curiosity and experiment, or by neglect, he is guilty of a great misdemeanor and offence, for which he may be indicted. But he is not under the controul, or supervision, or correction of the College of Physicians, or any other ; or liable to any penalty for so doing, notwithstanding the statute 14th and 15th Hen. VIII ; and, therefore, this mischief can only be, and I conceive ought to be, remedied by the legislature. As to the claims by the doctors of physic of the Scotch Universities to be admitted fellows of the College of Physicians, it is hardly worth the contest. If they are fit, and wish to practise in London, they will have of course a licence, and by that means be entitled to the

same rewards of their talents as if they were members of the College; and by being licentiates, they may be proposed by the president or any of the fellows, and by that means become members of the College, as much as if they had obtained their degrees at Oxford or Cambridge.

‘ JOHN WILLIAMS.

‘ *Sergeants Inn, Oct. 15th, 1807.*’

A Letter on Caloric, addressed to Dr. Mitchill of New York, by Thomas Ewell, M.D. of Virginia.*

‘ SINCE I had the honour of being with you, I have made two experiments which completely establish the doctrine of the materiality of heat denied by Count Rumford and other respectable philosophers. Your love of truth has induced me to hasten to communicate them to you, and I hope the result will give you satisfaction.

‘ It is highly probable that the doctrine of the materiality of heat is considered generally as correct, notwithstanding the specious arguments urged in opposition to the theory. There is, however, no positive proof on which the opinion is rested. The chemists have displayed great ingenuity in explaining the various phenomena produced by heat. With great readiness they have accounted for facts which are apparently contradictory. They have assigned good reasons why heat diminishes the bulk of some bodies, as argillaceous earth, while it enlarges most others; why cold, or an abstraction of heat, lessens the size of most substances, while it increases the bulk of water about to congelate; and they have given good reasons why all the experiments they have instituted to ascertain the gravity of heat have failed. The celebrated *Muschenbroeck* has also evinced great ingenuity in support of his doctrine of frigorific particles. As it would be useless to undertake to refute all the arguments advanced in support of the hypothesis, I shall proceed to relate my experiments.

‘ I procured a pair of excellent scales, of so nice a construction that their balance could be destroyed by one-

fourth of a grain. Two ounce vials nearly half filled, one with concentrated sulphuric acid, and the other with common water, were tightly stopped and exactly weighed. After I ascertained very precisely the weight, I poured the water of the one vial into the acid of the other, and, to prevent evaporation, immediately replaced the stoppers. The heat, as is usual on making such mixtures, was very considerable. As soon as all of it had escaped, so that the equilibrium in the temperature was restored, I weighed the vials with great caution a second time. On doing this I found that the loss of weight was equal to one grain and a half; which loss could have proceeded only from the conversion of latent into sensible heat, and its consequent escape.

‘ After performing the above experiment, I proceeded to the second in the following manner: As recommended in the Philosophical Transactions for 1787, by Dr. Beddoes, on behalf of Mr. Walker, I procured eleven parts of the muriate of ammoniac, ten of the nitrate of pot-ash, sixteen of the sulphate of soda, and thirty-two of water. The weight of the whole, with the vial containing the water, was precisely two ounces. I suddenly added the salts to the water, and directly corked the vial to prevent the condensation of the water in the surrounding air. The cold which followed was considerable, and continued so for several minutes. When the mixture ceased to absorb the sensible heat of the air, with the greatest care I wiped off all the water that had been condensed on the exterior of the vial before a warm fire. The vial with its contents was then weighed, and I found that the weight was increased half a grain, which addition could only have proceeded from the absorption of sensible heat through the vial.

‘ Of the correctness of these experiments any one may satisfy himself if he proceed with proper caution. Should there be any variation in the results, I believe it will be inconsiderable. The first experiment appears more conclusive than the second; and, in justice to one of my former fellow students, I ought to observe, that during a conversation I had with him, on my proposing the second experiment to ascertain the materiality of heat, he suggested the first. From a constant exchange of sentiment which I enjoyed while in Philadelphia among the students, the gentleman has escaped my recollection.

‘ That various substances have their capacities for heat altered, that some unite with heat, while others give it up; as originally suggested by the great Dr. Black, there can now be no doubt. The heat must chemically combine with such bodies, and in proportion to the quantity there must be a change of properties. The properties depending on the latent heat appear to me more important than seem generally believed. They appear of such consequence, that I think some of the processes in animals depend in a great measure upon this combined caloric. The process of respiration has long occupied the attention of many philosophic observers. Perhaps their not succeeding in the investigation depended on their supposing the mystery of the operation was proportionate to its importance. The theory of Lavoisier, the immortal father of French chemistry, has long since been refuted. It is scarcely possible that hydrogen and carbon could unite in the lungs to oxygen, without occasioning a destruction of the parts by the sensible heat that would be eliminated. The fixed air and halitus said to have been formed during the combustion of carbon and hydrogen must be simply an exhalation from the lungs, or an excretion. The theory that followed the above appears no better. According to this we must suppose that phosphorus exists formed in the blood; that oxygen unites with this phosphorus, although it be combined with the blood; and that the phosphoric acid then unites with the iron, to form the colouring matter. Equally destitute of foundation appears the hypothesis, that oxygen unites with the blood. In the first place, what proof have we that the chemical combination of the air can be destroyed by the blood? and in the second place, if the base of oxygen gas were to unite in the lungs, would not the sensible heat of the blood in other parts of the body convert it again into the gaseous state, and cause death, just as oxygen gas does when injected in the blood-vessels? But these theories do not explain many facts which are presented to our consideration when examining the phenomena of respiration. Among these I will mention great coldness of the body, notwithstanding a free circulation of blood; and at other times excessive heat, while the circulation is scarcely discernible. I have no hesitation, after reflecting on this subject, in saying, that the true theory of respiration remains to be revealed; and

I should be highly gratified if the following opinions should be found to approach nearer to truth.

‘ That the air contains a considerable quantity of latent as well as sensible heat, is unquestionably shown by so many facts, that I need not relate any in this place. That the air may have its capacities for heat altered, like most other fluids, when the circumstances in which it is placed are varied, there can be no doubt. That the circumstances of the air when pressed down into the delicately organized air-cells of the lungs are materially changed, is equally certain. That the blood is changed by change of circumstances, and that the organization of the blood-vessels in the lungs differs from that of most other parts of the body, no one will deny. Now, from this view of facts it appears to me that the air loses its capacity for latent caloric in the lungs, that the blood at the same time acquires an additional capacity for this caloric in the adjacent vessels, and consequently the caloric of the air immediately unites with the blood, and gives it the new properties of redness, capacity to stimulate the animal fibre, &c. &c. This theory will enable us to account for many facts which come daily under our observation.

‘ All the capacities of fluids to take in or give up heat depend on the mechanism or state of parts in which they are; and as the organization of parts is known to vary considerably, we are led to expect the irregular appearances of heat on the surface of the animal body. Accordingly we find that in general only a certain quantity of heat is given up by the blood when it arrives near the skin; but when the state of parts is altered, there is a great difference in the quantity. When the coldness is considerable, the blood acquires the power on the surface of the body to convert the sensible heat of the air into latent heat, and to combine with it just as it does in the lungs. This combination on the skin we believe to be precisely the same as that in the lungs. Hence redness, &c. is often acquired by the blood on parts that are inflamed. Dr. Klapp’s experiments to disprove the absorption of oxygen from the skin do not militate against our doctrine. It is upon these principles that I would account for the escape of heat from the body after death for several hours. The altered state of the vessels would naturally produce a change in the capacities in the fluids; and as this change would be

but flow after death, so would the escape of heat continue for some time.

‘ Our theory is corroborated by the fact that nitre and the acids have the power of increasing the irritability of the animal fibre. Fontana has proved that the blood, when of a proper quality, gives this irritability to fibres. This quality of the blood is acquired from the air, and as we believe from the latent caloric of the air. As the body of caloric exists in considerable quantities in acids, and as this caloric gives the irritability to fibres through the medium of the blood, we are led to conclude that the additional quantity of the caloric existing in the acid would impart to the blood an additional power to give irritability.

‘ With your permission I would make the following queries. May not chemists be mistaken in their idea that there is such a body as “ the base of oxygen gas?” May not all the changes said to be produced by oxygen depend on the caloric which is combined in different degrees with substances? For example, may not the differences between atmospheric air, oxygen gas, and nitric acid, depend on the various quantities of caloric in a given bulk?

‘ But these are only suggestions which I hope you will receive as an earnest of my desire to discover truth. Hereafter I hope to prosecute the subject with more success.’

Decomposition of the Fixed Alkalies.

WE have to announce a discovery in chemistry by Mr. Davy, unquestionably the most brilliant that has been made since that of the decomposition of water by our celebrated countryman, Mr. Cavendish, and which opens a new and almost boundless field for future investigation. It is, doubtless, highly flattering to the feelings of Englishmen, that they should have been the authors of almost all the most important discoveries made in modern chemistry, leaving little more to our Gallic rivals than the merit of generalizing, and reducing into system, the labours of others; fully justifying the claim to pre-eminence of freemen over slaves, in arts as well as arms—a pre-eminence which it is to be hoped Englishmen will always contend for and maintain.

At the late meetings of the Royal Society, a paper by Mr. Davy was read, detailing a number of experiments in

which he succeeded in decomposing the fixed alkalies, substances which have hitherto been ranked among elementary bodies. By means of a most powerful galvanic apparatus, both potash and soda were decomposed. This was effected by placing the moistened salt on a plate of platina, and exposing it to the galvanic action. Oxygen gas was disengaged, and small globules were perceived of a metallic appearance, and similar to the globules of mercury. Upon examination they were found to possess all the properties of a metal, but of a very peculiar kind.

The specific gravity of these globules, as procured from potash, was considerably less than that of distilled water, and they were found to swim even in distilled naphtha. At the freezing point of water (32° F.) they were hard and brittle; at 40° they could scarcely be distinguished from quicksilver; at 60° they were fluid; and at 100° volatile. One of the most striking properties of this new metal is its inflammability, in which respect it exceeds even phosphorus. When exposed to the atmosphere it rapidly imbibes oxygen, and reassumes its alkaline character: it takes oxygen from water, and even from alcohol; so that the only fluid in which it can be kept is naphtha.

Mr. Davy afterwards proved the metallic nature of this new substance by amalgamating it with different metals. One part by weight of this new metal with forty-eight of mercury formed an amalgam, which, when applied in the circle of a galvanic battery (that produced an intense heat) to iron, silver, gold, or platina, immediately dissolved these, and converted them into oxides, in which process alkali was regenerated. Glass, as well as all other metallic bodies, was also dissolved by the application of this substance: the base of the alkali seizing the oxygen of the manganese and of the minium, potash was regenerated. One of the globules placed on a piece of ice dissolved it, and burnt with a bright flame, giving out an intense heat. Potash was then found in the dissolved ice. Nearly the same effects followed when a globule was thrown into water; and in both cases a great quantity of hydrogen gas was liberated. When laid on a piece of moistened turmeric paper, the globule seemed instantly to acquire intense heat; but so rapid was its movement in quest of the moisture, that no part of the paper was burnt, only an intense deep red stain marked the course it followed, shewing a reproduction of alkali.

Soda, submitted to the same train of investigation, gave results very similar; but the metallic base was found to possess some peculiar properties. Its specific gravity was rather greater than that of the base of potash. It was fixed at a temperature of 150° , and fluid at 180° .

From the medium of numerous analytical and synthetical experiments, it appeared that 100 parts of potash consist of 15 oxygen, and 85 of the inflammable base or metal; while the same quantity of soda contains 20 of oxygen, and 80 of the base.

Mr. Davy afterwards examined the volatile alkali, which is commonly considered as consisting of hydrogen and nitrogen: he found, by numerous experiments, that oxygen is likewise a constituent part of this alkali, 100 grains of the latter yielding 20 of oxygen.

Other experiments served to convince Mr. Davy that oxygen is a constituent principle in the muriatic and fluoric acids, which chemists have been hitherto unable to decompose. He likewise examined some of the primitive earths, as they are called; particularly barytes and strontites, both of which yielded considerable quantities of oxygen. This renders it probable that these and the other alkaline earths which resemble the alkalies so strongly, are, like these, compounded bodies, each with its peculiar base.

These novel and interesting facts shew the necessity of reforming the nomenclature of chemistry. If oxygen really be an essential ingredient in the constitution of the alkalies, as the experiments above alluded to leave no room to doubt, the impropriety of the term oxygen is manifest.

TO THE EDITORS OF THE MED. AND CHIR. REV.

Gentlemen,

THE happy termination of the subjoined case appears to me to be so decidedly in favour of the improved method of evacuating collections of pus, as recommended by my very ingenious friend Mr. Abernethy, that I shall be obliged to you by giving it publicity through the medium of your widely extended and useful Review.

I am, Gentlemen,

Your obedient humble servant,

JOHN WALDON.

Bodmin, Cornwall, Dec. 5, 1807.

ON the 25th of May last I was requested to visit Mr. John Carter, at Port Isaac, a small fishing town in this county, who had experienced inexpressible sufferings for the two preceding years, inasmuch as to baffle the attempts of several medical gentlemen of eminence to whom he had applied for advice during that long period. He had also availed himself of the professional talents of my worthy predecessor Dr. Hall, who had pushed the mercurial treatment even to salivation, but with no better success. I found my patient upon crutches, with both of his thighs swollen to an enormous size, and with a countenance indicative of very great derangement of the system, though he was not so much emaciated as might have been expected from the length of his illness; added to this, he laboured under a very great despondency of mind, from not having been fully apprised of the real nature of his disease, the medical gentlemen being divided in opinion on his case, and I had some difficulty in removing the apprehension that the tumours were of the aneurismal kind, and consequently that they contained blood. I understood that Mr. Carter was about thirty-six years of age, and prior to the commencement of his present disease had enjoyed an unusual share of health. I also learnt his avocation to be that of an agent or inspector to the pilchard fishery, as well as to the other mercantile concerns carried on in that place, which had necessarily subjected him to the great and dangerous vicissitudes of heat and cold, wet and dry, and to which causes he himself attributed the whole of his sufferings.

My patient, who is an intelligent man, informed me, that, after being "wet to the skin," he was attacked with a violent pain across the loins, and, being at that time several miles from Port Isaac, had the greatest difficulty to reach his own house, though on horseback. A considerable degree of fever (or rather general inflammation) supervened, which confined him to his bed for several months, when his complaints assumed a chronic form, and he was able to crawl about only with the help of crutches. It appeared also that, about eighteen months subsequently to the first attack, a small tumour made its appearance on the anterior part of the thigh, immediately beneath Poupert's ligament, which for several weeks continued to increase, until it had reached the size of a pint basin. The

unfortunate man at this time had no other alternative but to struggle against his disease for the support of a large family, and to subject himself to fresh dangers, or to resign his situation to his employers. He chose the former, though with the greatest pain and difficulty to himself, as may be well imagined, and with the same unhappy consequences; for, by a fresh accession of cold, the suppurative process again commenced, and he was confined to his bed a second time for the space at least of two months. To avoid prolixity, it will suffice to say that soon after another tumour made its appearance in the left thigh, which, with the first, continued to increase until the 25th of May last, the time of my first visit. On examination, I found that the tumours extended from the groin to within about four inches of each knee, and nearly surrounded the thighs. The fascia was so much distended, that it felt as tense as the head of a drum; and in some places the integuments were so very thin, that I hastened the adoption of such measures with my patient and his friends as will be hereafter explained, from an apprehension that the integuments might give way in the mean time, and the patient sink under the discharge.

With those very formidable suppurations he had considerable pain in the lumbar vertebræ and articulations of the hip joint, which strongly indicated an extensive caries: his pulse was also at 100; tongue much coated; and his general health considerably impaired. Under such very unpromising circumstances I felt extremely cautious in giving a prognostic, though my patient now evinced great firmness of mind, by declaring that he was prepared for the event, be it what it might, in order to have his sufferings at an end. I therefore apprised him of my hopes and fears, that the contents of the tumours were decidedly pus, and not blood; that it ought to be evacuated as soon as possible, and the orifices carefully closed, so as not to admit the external air, and the operation to be repeated when a sufficient accumulation should again take place; and that, provided the lumbar vertebræ and bones of the pelvis were free from disease, he might yet be restored to his family: on the other hand, were the tumours suffered to burst, he would in all probability be destroyed by a profuse discharge in the space, perhaps, of a very few weeks. Gloomy as were his prospects, my patient eagerly caught

at the plan I had proposed, and the Wednesday following was fixed upon for the operation.

I suggested to Mr. West, an intelligent surgeon of Camelford, to draw off the contents of the first tumour by a common hydrocele trochar, which was immediately done, without the least interruption from those coagula so commonly met with in the contents of psoas abscesses, to the enormous quantity of eight pints. On withdrawing the canula, the orifice was carefully closed with an adhesive plaister, and a flannel roller applied over the whole, in order to support the highly distended integuments. With a mind much relieved by the success of the operation, Mr. Carter was put to bed; and in the space of two hours we proceeded with the other thigh, and with nearly the same result. Thus was evacuated from both thighs the prodigious quantity of sixteen pints of well formed pus. The next day Mr. West informed me by letter, that, to his great astonishment, he found his patient down stairs, and very deliberately walking from room to room without the aid of either crutch or stick, his old companions; and so very rapidly did he recover after the first operation, that in the short space of a week Mr. Carter resumed his usual business.

The distance of three weeks intervened between the first and second operation, when about half the quantity was drawn off. From the second to the third, six weeks, when only one pint from the left thigh, the right indicating no accumulation whatever. As his general health began to mend immediately after the first operation, little or no medicine was ordered for him, excepting an occasional laxative, to overcome a torpid state of the intestines, which had been brought on by a long and an extensive use of opium. It is with peculiar satisfaction I add, that I saw my patient for the last time about a fortnight since, in the best possible state of health, and without the least remains of his late formidable complaints.

—————Si quid novisti rectius istis
Candidus imperti, si non, his utere mecum.

HOR.

JOHN WALDON, M.D.

Bodmin, Cornwall, Dec. 5, 1807.

TO THE EDITORS OF THE MED. AND CHIR. REV.

Gentlemen,

I THINK it a duty incumbent on the profession at large to thank a brother publicly for any hint, whereby the sufferings of our fellow-creatures are relieved, and the reputation of the profession in anywise advanced.

I have regretted, as I am sure every medical man must have done, the little good effected by the general mode of practice for the cure or rather palliation of the Hooping Cough: indeed, it must be confessed we have hitherto done very little towards the cure of that very distressing malady.

But, thanks to Mr. Reece, we can now act confidently (though cautiously) for his very valuable suggestion; I mean the exhibition of the cerussa acetata in the cure of this disease*.

I begin by cleansing the stomach and bowels; that is to say, I give a gentle emetic and aperient, and then the following R. Cerussæ acetatæ gr. iij. syr. violæ ℥ij. aq. rosæ ℥ij m.f. mixt. Of this I order a tea-spoonful every four or five hours, as the symptoms are urgent.

I confess at first I was fearful of the effects of this medicine on that tender age, though Mr. Reece orders five grains in the same sized mixture; but in no one instance have I been made in the least uneasy; on the contrary, its effects are delightful, and, I may almost say, immediate, by allaying those very distressing symptoms.

I have administered it to children of one year old, up to the age of fifteen, and have invariably been highly gratified at its good effects. I own I almost tremble when I administer it: but surely in so violent and often fatal a disease, when we have a medicine of known efficacy (as I am sure it will be found), we are authorized to have recourse to it.

I trust practitioners will give the above medicine a fair trial, and make known the result; but let me hope it will not get into illiterate hands, or be vended under a mysterious name by empirics: if it should, every feeling bosom must tremble for the consequences. Used judiciously, I am confident we have an invaluable remedy for this most painful disease.

And am your obedient servant,

J. DALTON,

Formerly Army Surgeon.

Granley, near Guilford, Dec. 15, 1807.

* See *Med. and Chir. Rev.* for August last.

*Account of the Spontaneous Appearance of Hooping Cough :
by Dr. A. C. Willey, of Block Island (N. America).*

“THE *Tussis Convulsiva*, or Hooping Cough, occurred here in April 1805, and did not become wholly extinct till some time in autumn. What rendered it particularly worthy of attention, was its being indigenous. It made its appearance over the greater part of the Island at the same time, and was untraceable to any apparent source. The insulated situation of this place is extremely favourable to observations, and the detection of facts of this nature, without the danger of deception; and has afforded, in the present instance, a fair demonstration that the hooping cough can originate without contagion. Indeed, I am inclined to believe that the rise and progress of this epidemic disease do not depend so much upon contagion as is generally imagined. The universal belief that the system, during the operation of *pertussis*, generates a specific virus capable of communicating the disease, seems to have prevented the mind from looking any farther for a principle adequate to its production. But because the living system possesses the power of elaborating this virus, I know of no reason why we should deny its formation in the departments of inanimate nature. The laws of physiology and inorganic matter agree in the production of soda and lime; why not then in the generation of pertussic poison? That there is a principle, independent of contagion, capable of inducing this complaint, I feel fully convinced, not only from its origination on this Island, but from the number of cases which I have seen in those who have never been exposed to contagion. This principle undoubtedly exists in the atmosphere, which it pervades to a certain extent; but what it is, and how formed, remains a curious subject for physical research.”

Experiments on the Effects which a great Degree of Heat produces on the Animal Economy : by J. E. De la Roche, of Geneva.

M. De la Roche has made a great number of experiments on the heat which man and other animals are capable of supporting, applied both through the medium of

water and air. He endeavours to ascertain the influence which heat exerts on respiration; and the relation that exists between the evaporation of the matter of transpiration, and the faculty which animals possess of generating cold, and likewise the state of the bodies of animals destroyed by excess of heat.

These experiments shew, 1st. That exposure to a temperature of 50° (145° F.) or even 45° (130° F.), is sufficient to induce death in animals of a small bulk. It is even probable, that a still less degree of heat, when longer continued, may produce the same effect.

2. It appears from experiments made by M. de la Roche and M. Berger on themselves, that man can support extreme degrees of heat, though but for a short time. There appears, however, to be a considerable difference in different individuals in this respect.

3. That an atmosphere loaded with moisture is far less supportable than a dry air, in an equal degree of heat.

4. That the loss of weight occasioned by transpiration appears to be in a direct ratio to the elevation of temperature. It appears further, that the heat of aqueous vapour excites perspiration much more forcibly than a dry heat.

5. That the faculty possessed by man and other animals of preserving a constant temperature, though exposed to a great degree of heat, is much less than has been generally believed since the experiments of Fordyce and Blagden; and that it is not at all comparable to the property which they have of resisting cold, by preserving themselves at a temperature above that of the surrounding medium.

6. But although the faculty of resisting heat is limited, it nevertheless exists; and it becomes an interesting subject of inquiry to investigate the cause. Does it depend exclusively upon the cold produced by evaporation, as some physiologists suppose? The experiments of M. De la Roche render this supposition extremely probable, at least with regard to cold-blooded animals. He found that inanimate bodies, the surface of which was moistened and susceptible of evaporation, acquired a less elevated temperature when they were exposed to a strong heat, than warm-blooded animals placed in the same circumstances.

7. M. De la Roche endeavoured afterwards to ascertain the influence of heat on the phenomena of respiration.

But, although Dr. Crawford was led to suppose that the vitiation of the air by the respiration of animals was less in proportion as the heat to which they were exposed was greater, the experiments of our author did not point out any constant relation between the degree of vitiation of the air in which animals were confined, and that of the temperature to which they were exposed.

8. Lastly, the author investigated the circumstances attending death occasioned by exposure to extreme heat. But, on examining the dead bodies, the phenomena, the most remarkable of which was the great diminution of muscular irritability, were not sufficiently constant to allow of any conclusion being drawn with respect to the cause of death in those cases.

On the Irritability of the Garden Lettuce (lactuca sativa).

M. Carradori, whose inquiries into the physiology of vegetables have repeatedly come before us, has discovered a curious instance of vegetable irritability in the garden lettuce, at certain periods of its growth. If a plant of this species be touched lightly with the finger, at the time of its being in flower, there will be perceived instantly an exudation of a milky juice, the *juccus proprius* of the plant, in the form of exceedingly minute drops. This effect, however, is only observable in the small leaves of the branches, and in the calyces of the flower. The contact of any solid body, however polished, is sufficient to produce the phenomenon in question; but if a sharp-pointed body be made use of, as a blade of grass, the effect is much more striking, the milky fluid being thrown out in a jet of small drops or vapour, perceptible at some distance.

It is remarkable, that the application of fluids of the most acrid kind, as the mineral acids, if so applied as to avoid mechanical irritation, produces no effect, but the passage of the smallest insect over the leaf suffices to produce the phenomenon. Yet the exudation bears no proportion to the *degree* of mechanical violence inflicted; which shews that it is the effect of *irritation*, or of the excitement of irritable parts.

In some vegetables, heat, cold, strong odours, volatile and stimulating fluids, are found to excite their irritability;

as in the sensitive plant: but as these appear to have no effect on the exudation of the lettuce, it would seem that the irritability of this plant is not capable of being affected by every stimulus; which serves to shew the analogy between this property in vegetables and animal irritability. The expulsion of the milky juice in this case must be owing, M. Carradori thinks, to the contractile power of the vessels of the plant, similar to muscular contractility.

Case of Cephalalgia; with the Dissection: by M. Salmade, D. M. P., of Paris.

AN officer in the army had, from his childhood, been subject to frequent attacks of periodical headach, which often lasted twenty-four hours, and were generally preceded and accompanied with vomiting. He had served in various climates, and had suffered an attack of yellow fever in the West Indies. For several months before his death, the symptoms increased in severity. He generally had a return of the headach and vomiting every morning, which lasted for several hours. The pain occupied principally the left side of the head, the temple, eyebrow, and bottom of the orbit, stretching from thence to the occiput: the eye was tender, and watered much during the paroxysm. The patient felt some relief from strongly compressing the head.

The attacks, after a time, became more frequent. Light was intolerable to him, and he saw objects dimly with the left eye. There was also some difficulty of hearing, especially when leaning forward. The slightest noise was insupportable to him. He had a constant inclination to sleep, without being able to satisfy it. To these symptoms were added some degree of alienation of mind, confusion of ideas, and difficulty of articulation. Throughout the whole he was free from fever. Convulsive movements at length took place, and were speedily followed by dissolution.

It is useless to enumerate the remedies employed in this case, for they all proved unsuccessful. Suffice it to say, that every probable means were tried, with none but temporary advantages. Upon opening the head, the following appearances were observed.

The vessels of the brain and the sinuses were as full of

blood as if they had been injected. The substance of the brain around the left ventricle was depressed, and softer than natural; indeed, the whole hemisphere on this side was less firm than on the right. The right ventricle was empty; but the left contained about four ounces of lymph. The choroid plexus was studded with small hydatid-like bodies. Towards the posterior part of the ventricle, a tumour was found in the substance of the posterior lobe of the brain, extending from the ventricle to the part of the dura mater which corresponds with the lambdoidal suture on the same side. Its figure was that of an irregular square; its longitudinal and transverse diameters about seven inches. This tumour, which weighed about seven ounces, was formed of two membranes, the external of which was thick and dense; the internal soft, thin, and somewhat like concremented albumen. It contained within its cavity a yellow semi-fluid matter, like the contents of the *meliceris*. Upon opening the left ventricle, a fetid odour exhaled, like that of the sweat of the feet.

The existence of this tumour sufficiently explains the symptoms of the disease. The compression which it made upon the different points of the nervous system must have affected the acoustic and optic nerves, and consequently the senses of hearing and seeing. It would probably at length come to act upon the origin of the eighth pair of nerves, the manner of distribution of which accounts for the various phenomena which presented themselves, and particularly the affection of the stomach.

Of the Fatality of Consumption in France.

IT does not appear, on a perusal of some *tables* accompanying an account of the *Medical Constitution* of the last year in Paris, as collected from the reports of the public Institutions*, that *phthisis pulmonalis* is less frequent in that city, or more successfully treated, than among ourselves.

Of sixty-three phthical patients registered, twenty-six died; the remaining thirty-seven were either discharged not cured, or remained ill at the time of the report. In fourteen of them the phthisis was complicated with other

* Journal de Medecine, tom. viii, p. 131.

diseases, four of which were cured, leaving the phthifical complaints behind. Amongst those who died, an acute pleurisy and severe chronic affection, combined with the consumption, hastened the patient's death.

MEDICAL AND PHILOSOPHICAL INTELLIGENCE.

M. *Tenon*, a celebrated French anatomist, has lately published an account of some discoveries relating to the minute structure of the eye and its appendages. He has observed tendinous bands tying the *recti* muscles to the anterior edge of the orbit, serving as pulleys to the tendons, and preventing the muscles from compressing the globe of the eye. He has detected a membranous tunic which furrounds the globe, attaches it to the two angles of the orbit by a kind of wings, passes on to the eyelids, is afterwards reflected behind the *tarfi*, and gives passage to the tendons of the muscles. He has also discovered small ligaments which join the extremities of the *tarfi* to the orbit. He has examined the effect of various chemical liquids on the crystalline lens. Lastly, he has given a new opinion regarding the agents which transmit the influence of the retina to the iris, and by which the impressions the retina receives dilate or contract the iris. These agents, M. *Tenon* asserts to be the ciliary processes, the small tongues of which are extended to the posterior part of the iris, while the tails touch the retina.

M. *Laumonier* lately presented to the class of physical sciences of the French National Institute one of the most extraordinary instances of monstrosity hitherto observed in the human species, and the nearest approach that has yet been seen to perfect hermaphroditism. The subject was a female, who, in addition to all the usual sexual organs, had two well formed testicles concealed in the doubling of the external labia, and the different vessels of which opened into the fundus uteri.

At the same sitting a memoir was read by M. *Duvernoy* on the subject of the hymen, in which it is asserted, that this singular membrane is by no means peculiar to the

human species, as commonly supposed, but is to be found in all classes of animals.

MR. Hill, of Hinkley, is arranging materials for a work on those Diseases of the Bones which produce Distortion of the Spine and Limbs, in which the medical, surgical, and mechanical modes of treatment will be considered; and the latter, that it may be rendered more intelligible, will be illustrated by plates.

M. *Barthez*, physician to the French Emperor, and one of the most distinguished practitioners of Paris, has just published a work, in 2 vols. 8vo, entitled *Consultations in Medicine*, to which are annexed a great number of other consultations of M.M. *Boucart*, *Touquet*, *Lorry*, and *Lemur*.

THE second volume of the New London Medical Dictionary, completing that work, illustrated with a great number of plates, is in forwardness, and will certainly be published in March next.

DR. George Birkbeck has been lately appointed one of the Physicians to the General Dispensary, in the room of Dr. Yelloly, resigned.

SPRING LECTURES.

St. George's Hospital.—Dr. Pearson's Lectures on the Practice of Physic, Materia Medica, and Chemistry, will recommence the first week in February, at his house, No. 9, Great George Street, Hanover Square, where particulars may be had, and at St. George's Hospital.—A Register is kept of the Cases of Dr. Pearson's Patients at St. George's Hospital, and an account is given of them at a Clinical Lecture every Saturday morning at nine o'clock.

Mr. Gunning, Surgeon to St. George's Hospital, will commence his Lectures on the Principles and Operations of Surgery on Friday the 22d of January, 1808, at eight o'clock in the evening. Particulars may be known at Mr. Gunning's house, No. 45, Conduit Street, or at St. George's Hospital.

General Dispensary, Aldersgate Street.—Dr. Clutterbuck, one of the Physicians to this Institution, purposes,

about the middle of January, to begin a Course of Lectures on the THEORY and PRACTICE of Physic. The Course will include the PHYSIOLOGY, or Doctrine of Functions, and also an Outline of the MATERIA MEDICA. The Practical Part will be illustrated by occasional Reference to the Practice of the Dispensary. Further particulars may be had on application at the Dispensary, or at No. 17, St. Paul's Churchyard.

Dr. Clarke and Mr. Clarke will begin a Course of their Lectures on Midwifery and the Diseases of Women and Children on Friday, January 22, 1808. The Lectures are read every day at the house of Mr. Clarke, No. 10, Upper John Street, Golden Square, from a quarter past ten o'clock in the morning till a quarter past eleven, for the convenience of Students attending the Hospitals. For particulars apply to Dr. Clarke, No. 1, New Burlington Street; or to Mr. Clarke, No. 10, Upper John Street, Golden Square.

Mr. Carpue will begin his Course of Lectures and Demonstrations on the 4th of January 1808, at his house, No. 50, Dean Street, Soho.

Mr. Chevalier, Surgeon Extraordinary to the Prince of Wales, and Surgeon to the Westminster General Dispensary, will commence his next Course of Lectures on the Principles and Operations of Surgery on Monday the 11th of January 1808, at eight o'clock in the evening, at his house in South Audley Street, Grosvenor Square, where printed particulars may be had.

Theatre of Anatomy, Blenheim Street, Great Marlborough Street.—Mr. Brookes will commence his Spring Course of Lectures on Anatomy, Physiology, and Surgery, on Tuesday the 19th of January 1808, at two o'clock in the afternoon. Spacious apartments, thoroughly ventilated, and replete with every convenience, are open all the morning, for the purposes of dissecting and injecting, where Mr. Brookes attends to direct the Students, and demonstrate the various parts as they appear on dissection.

Mr. Taunton, Surgeon to the Finsbury and City Dispensaries, will begin his Spring Course of Lectures on Anatomy, Physiology, Pathology, and Surgery, on Saturday, January 23, 1808, at his house in Greville Street, Hatton Garden, at eight o'clock in the evening; to be continued every Tuesday, Thursday, and Saturday.

